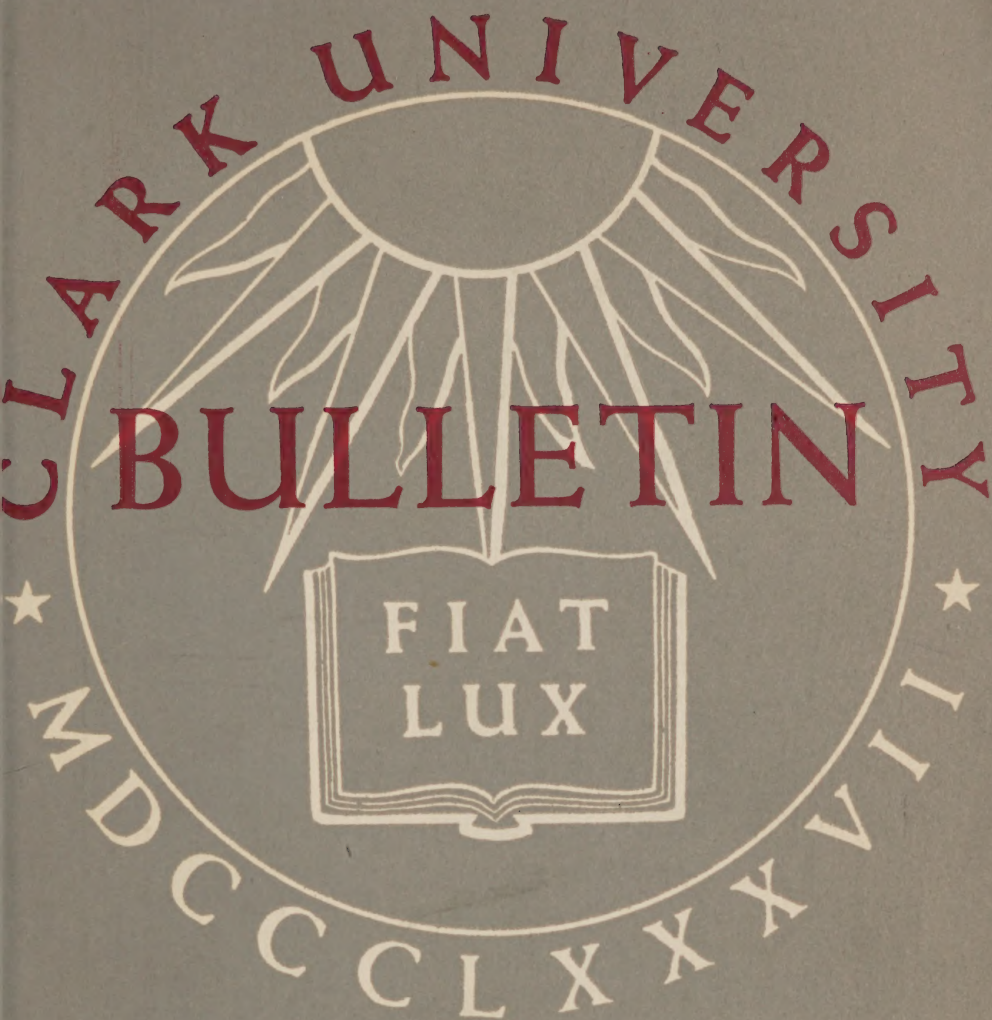




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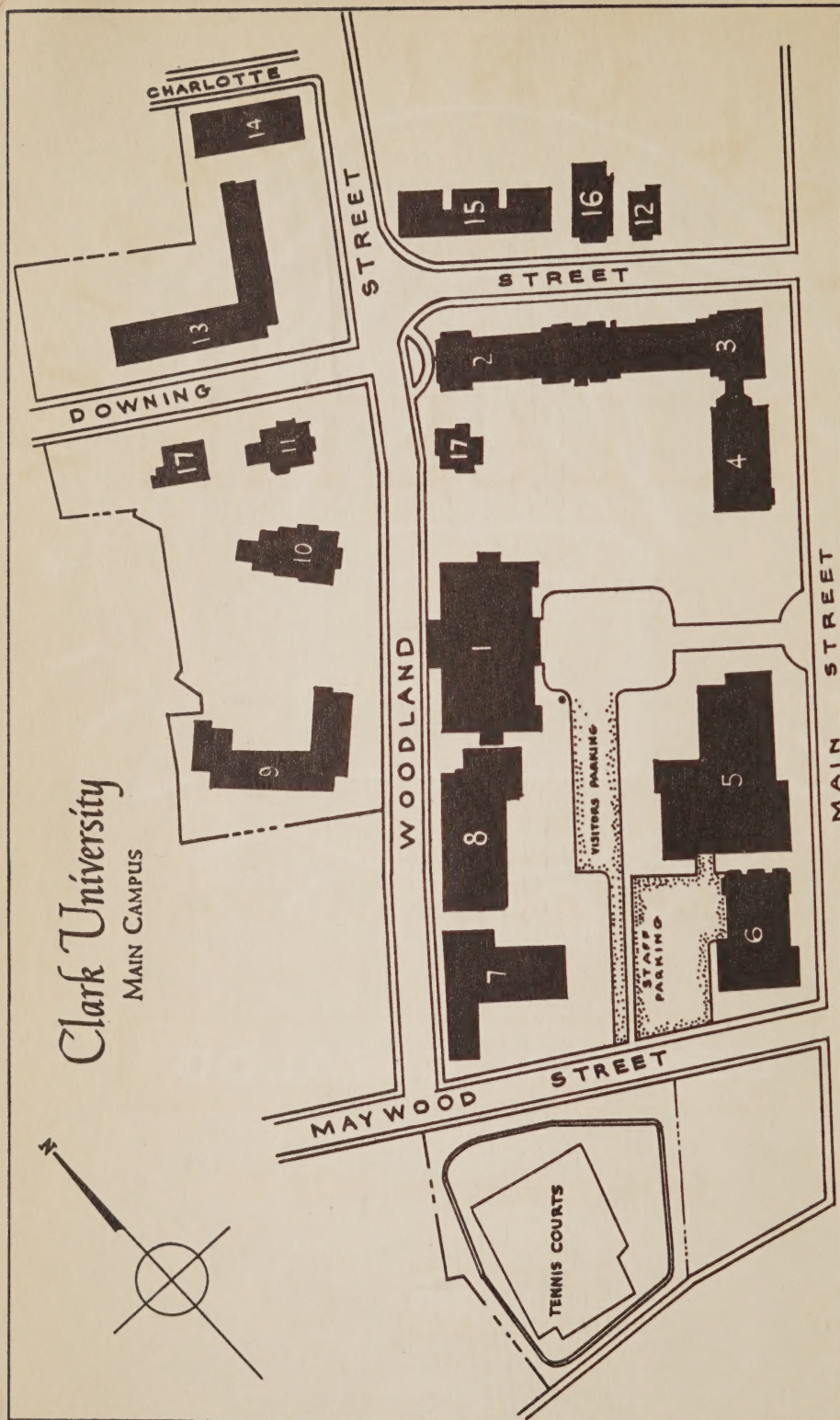
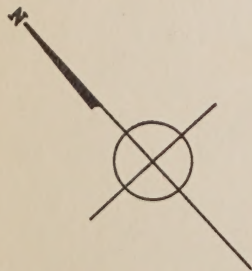
GENERAL CATALOG

for the academic year ¹⁹⁵⁸⁻⁵⁹ ~~1959-60~~

No. 242

Clark University

MAIN CAMPUS



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|---------------------|-----------------------|---------------------------|-------------------------|
| 1. Jonas Clark Hall | 7. Science Building | 13. Men's Dormitory | 16. Infirmary |
| 2. Atwood Hall | 8. Jeppson Laboratory | 14. Estabrook Hall | 17. University Building |
| 3. Library | 9. Women's Dormitory | 15. University Apartments | |
| | 10. President's Home | | |
| | 11. Dean's Home | | |
| | 12. Faculty Home | | |

Clark University

BULLETIN



GENERAL CATALOG

for the academic year 1959-60

No. 242

September, 1959

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A record for the academic year 1958-59.
Such announcements for the year 1959-60 as
can be made at the time of publication are
included.

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1959

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DECEMBER

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The Academic Calendar

The academic year begins on the Monday before the fourth Thursday in September and ends on Saturday before the thirty-eighth Monday. It includes two approximately equal semesters and three vacation periods: two weeks including Christmas and New Year's Days; one week at the close of the mid-year examination period, and one week near the first of April.

The first semester ends on the Saturday before the twentieth Monday. The second semester begins on the twentieth Monday of the academic year.

First Semester 1959-60

1959

September	21	Monday	— Registration day. Beginning of academic year 1959-60.
October	12	Monday	— Columbus Day. Not a holiday.
November	2	Monday	— Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1960.
November	11	Wednesday	— Veterans' Day. Not a holiday.
November	16	Monday	— Mid-semester reports due at 9 a.m.
November	25	Wednesday	— Beginning of Thanksgiving recess at close of classes.
November	30	Monday	— End of Thanksgiving recess at 8 a.m.
December	18	Friday	— Beginning of Christmas recess at close of classes.

1960

January	4	Monday	— End of Christmas recess at 8 a.m.
January	14	Thursday	— Classes omitted.
January	15	Friday	— Beginning of semester examination period.
January	26	Tuesday	— Beginning of mid-year recess.

Second Semester 1959-60

February	1	Monday	— End of mid-year recess. Registration day for the second semester.
February	2	Tuesday	— Beginning of classes for the second semester.
February	5	Friday	— Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June, 1960.
February	22	Monday	— Washington's Birthday. Not a holiday.
March	21	Monday	— Mid-semester reports due at 9 a.m.
March	25	Friday	— Beginning of spring recess at close of classes.
April	4	Monday	— End of spring recess at 8 a.m.
April	19	Tuesday	— Patriots' Day. Not a holiday.
May	9	Monday	— Dissertations for the degree of Doctor of Philosophy due at Registrar's office at 9 a.m.
May	16	Monday	— Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's office at 9 a.m.
May	18	Wednesday	— Classes omitted.
May	19	Thursday	— Beginning of semester examination period.
May	30	Monday	— Memorial Day. A holiday.
June	5	Sunday	— Commencement Day.

Board of Trustees

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(President; Emeriti, alphabetically; Faculty and Officers of Instruction, alphabetically)

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EMERITI

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SAMUEL J. BRANDENBURG, PH.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, PH.D., Professor of Chemistry and Director of the Chemical Laboratories. A.B., Harvard University, 1914; M.A., 1928; Ph.D., 1932. (1926-59)

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VERNON AHMADJIAN, PH.D., Assistant Professor of Biology. A.B., Clark University, 1953; A.M., Harvard University, 1956. (1959-)

FESTUS G. AMSDEN, A.B., Assistant Director of Physical Education for Men. A.B., Clark University, 1951. (1954-)

KARL OSCAR EMANUEL ANDERSON, PH.D., Associate Professor of English. A.B., Harvard University, 1927; M.A., 1928; Ph.D., 1942. (1945-)

KARL L. ARNDT, PH.D., Professor of German. M.A., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

ROBERT WILLIAM BAKER, PH.D., Associate Professor (Affiliate) of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE ANTHONY BALKO, JR., M.B.A., Assistant Professor of Business Administration. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)

MITCHELL B. BALTER, PH.D., Assistant Professor (Affiliate) of Clinical Psychology. B.A., University of Michigan, 1950; M.A., University of Connecticut, 1952; Ph.D., 1959. (1958-)

RAYMOND EDMOND BARBERA, PH.D., Assistant Professor of Romance Languages. A.B., Brooklyn College, 1947; M.A., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

CLAUDE WILLIS BARLOW, PH.D., Associate Professor of Classics. A.B., Amherst College, 1928; M.A., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)

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*JAMES FRANKLIN BEARD, JR., PH.D., Associate Professor of English. A.B., Columbia College, 1940; M.A., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

* Absent on leave, 1958-59.

ROBERT NELSON BECK, PH.D., Associate Professor of Philosophy. A.B., Clark University, 1947; M.A., Boston University, 1948; Ph.D., 1950. (1948-)

CLEMENS E. BENDA, M.D., Associate Professor (Affiliate) in Psychology. M.D., University of Berlin, 1922. (1958-)

ROGER MAURICE ALBERT BIBACE, PH.D., Assistant Professor (Affiliate) in Clinical Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

HENRY CHARLES BORGER, JR., PH.D., Associate Professor of Education and Dean of Students. A.B., Princeton University, 1933; M.A., Columbia University, 1938; Ph.D., 1954. (1950-)

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GUY HARVEY BURNHAM, A.M., Instructor in Geography and Cartographer, Graduate School of Geography. A.B., Clark University, 1916; A.M., 1922. (1922-)

GEORGE CAMOUGIS, PH.D., Assistant Professor of Biology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

HANS CAROL, PH.D., Visiting Professor of Geography. Ph.D., University of Zürich, 1945. (1958-)

* WILLIAM HOYT CARTER, JR., PH.D., Associate Professor of English. A.B., Middlebury College, 1936; M.A., Harvard University, 1938; Ph.D., 1951. (1949-)

GEOFFREY CLIVE, PH.D., Assistant Professor of Philosophy. B.A., Colgate University, 1948; M.A., Harvard University, 1950; Ph.D., 1953. (1957-)

* Absent on leave, first semester, 1959-60.

* Deceased, March 14, 1960

JAMES MADISON COFFEE, Ed.D., Associate Professor of Education and Director of Placement. A.B., Duke University, 1949; M.A., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)

MORRIS HAROLD COHEN, Ph.D., Associate Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)

LYDIA PERRY COLBY, Registrar. (1932-)

PETER ELIA COMALLI, JR., Ph.D., Assistant Professor (Affiliate) of Psychology. A.B., Clark University, 1949; A.M., 1951; Ph.D., 1956. (1958-)

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*JESSIE CAMPBELL CUNNINGHAM, A.M., Instructor in English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)

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* Absent on leave, 1959-60.

- HAROLD GOODGLASS, PH.D., Lecturer in Psychology. B.A., College of the City of New York, 1939; M.A., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)
- DANIEL GORENSTEIN, PH.D., Associate Professor of Mathematics. A.B., Harvard University, 1943; Ph.D., 1950. (1951-)
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- ROY CHALMERS GUNTER, PH.D., Associate Professor of Physics. B.S., Bowdoin College, 1938; M.A., Boston University, 1939; Ph.D., 1942. (1941-)
- *GORDON T. GWINN, PH.D., Associate Professor of Psychology. A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. (1949-)
- HERBERT HABER, M.A., Instructor in English. A.B., Brooklyn College, 1954; M.A., University of Chicago, 1955. (1958-)
- GEORGE EDWARD HARGEST, M.B.A., Associate Professor of Economics and Business Administration and Acting Director of the Division of Business Administration. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)
- M. EVELYN HARRIMAN, M.A. IN ED., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)
- EDWARD HAROLD HASTINGS, A.M., Instructor in English. A.B., Wesleyan University, 1946; A.M., Harvard University, 1947. (1958-59)

* Absent on leave, first semester, 1958-59.

SEYMOUR HAYDEN, A.M., Assistant Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948. (1957-)

SHERMAN STRONG HAYDEN, Ph.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; M.A., Columbia University, 1936; Ph.D., 1942. (1946-)

M. HAZEL HUGHES, M.Ed., Dean of Women and Director of Physical Education for Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)

ROBERT MOOERS HYDE, A.M., Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

VERNON JONES, Ph.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)

HENRY DONALDSON JORDAN, Ph.D., Professor of English History and Dean of the College. A.B., Harvard University, 1918; M.A., 1922; Ph.D., 1925. (1931-)

BERNARD KAPLAN, Ph.D., Associate Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)

*GERSON KEGELES, Ph.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)

†JESSE FANNIN KING, M.A., Associate Professor of Romance Languages. A.B., Pomona College, 1936; M.A., Harvard University, 1937. (1946-)

WERNER KOELLA, M.D., Lecturer in Psychology. M.D., University of Zurich, 1942. (1958-)

DONALD M. KRUS, Ph.D., Assistant Professor (Affiliate) of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-)

* Absent on leave, 1959-60.

† Absent on leave, 1958-59.

DWIGHT ERWIN LEE, PH.D., Professor of Modern European History and Secretary of the Graduate Board. A.B., University of Rochester, 1921; A.M., 1922; Ph.D., Harvard University, 1928. (1927-)

LESLIE LEIFER, PH.D., Assistant Professor of Chemistry. B.S., College of the City of New York, 1950; Ph.D., University of Kansas. 1959. (1959-)

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* ARTHUR EARL MARTELL, PH.D., Professor of Chemistry. B.S., Worcester Polytechnic Institute, 1938; Ph.D., New York University, 1941. (1942-)

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* Absent on leave, 1958-59.

* - Deceased, May 16, 1960 .

- FREDERICK EUGENE MELDER, PH.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-1946; 1950-)
- GEORGE H. MERRIAM, A.M., Director of Admissions. A.B., Clark University, 1944; A.M., Brown University, 1947. (1952-)
- JAMES MONIZ, A.M., Instructor in Economics. B.B.A., Clark University, 1956; A.M., 1958. (1959-)
- RAYMOND EDWARD MURPHY, PH.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)
- KAZUO NAKAMOTO, D.Sc., Visiting Lecturer in Chemistry. B.S., Ofaka University, Japan, 1945; D.Sc. 1953. (1959-)
- PAUL M. NASH, M.Ed., Assistant Professor of Education. B.S. (Econ.), University of London, 1949; M.Ed., University of Toronto, 1955. (1957-59)
- WILLIAM R. NES, PH.D., Associate Professor of Biochemistry. B.A., University of Oklahoma, 1946; M.S., University of Virginia, 1948; Ph.D., 1950. (1958-)
- HOWARD WHITE NICHOLSON, PH.D., Associate Professor of Economics. B.A., Oberlin College, 1942; M.A., Harvard University, 1948; Ph.D., 1953. (1958-)
- THEODORE NICOL, PH.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; M.A., Harvard University, 1928; Ph.D., 1933. (1946-)
- RUDOLPH FINK NUNNEMACHER, PH.D., Professor of Biology. B.S., Kenyon College, 1934; M.A., Harvard University, 1935; Ph.D., 1938. (1939-)
- NICHOLAS LEWIS ONORATO, PH.D., Visiting Lecturer in Business Administration. B.S., Boston University, 1951; A.M., Clark University, 1952; Ph.D., 1959. (1957-59)
- LESLIE PHILLIPS, PH.D., Professor (Affiliate) in Clinical Psychology. M.A., University of Chicago, 1944; Ph.D., 1949. (1946-)
- LILLIAN RAEFF, PH.D., Lecturer in Psychology. B.S., College of the City of New York, 1950; A.M., Clark University, 1951; Ph.D., 1956. (1956-)

- MARC RAEFF, PH.D., Associate Professor of Russian History. M.A., Harvard University, 1947; Ph.D., 1950. (1949-)
- RELLY RAFFMAN, M.A., Assistant Professor of Music. A.B., Dartmouth College, 1943; M.A., Columbia University Teachers College, 1949. (1954-)
- ERWIN RAISZ, PH.D., Visiting Lecturer in Geography. Diploma, Royal Polytechnicum, Budapest, 1914; M.A., 1924; Ph.D., Columbia University, 1929. (1947-)
- J. RICHARD REID, PH.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; M.A., Harvard University, 1936; Ph.D., 1943. (1944-)
- JOHN T. REYNOLDS, M.S., Assistant Professor of Biology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954. (1956-)
- PERCY MARTIN ROOPE, PH.D., Professor of Physics. A.B., Clark University, 1920; A.M., 1924; Ph.D., 1927. (1921-)
- HARRIS ROSENKRANTZ, PH.D., Associate Professor (Affiliate) of Biology. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)
- BERNARD SARACHEK, M.A., Assistant Professor of Business Administration. B.A., University of Kansas City, 1952; M.A., 1955. (1959-)
- ERIC SELLIN, M.A., Instructor in Romance Languages. B.A., University of Pennsylvania, 1955; M.A., 1958. (1958-59)
- DAYTON D. SHEPHERD, M.A., Lecturer in Education. B.S., Southwest Missouri State College, 1946; M.A., Yale University, 1950. (1954-)
- JOHN SUNAPEE STUBBE, PH.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)
- THOMAS TAMOTSU SUGIHARA, PH.D., Associate Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-)
- STANLEY SULTAN, PH.D., Assistant Professor of English. B.A., Cornell University, 1949; M.A., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)

BARRY D. TARGAN, M.A., Instructor in English. B.A., Rutgers University, 1954; M.A., University of Chicago, 1955. (1959-)

EDWARD N. TRACHTENBERG, Ph.D., Assistant Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)

ARNOLD TREHUB, Ph.D., Lecturer in Psychology. A.B., Northeastern University, 1949; M.A., Boston University, 1951; Ph.D., 1954. (1958-)

ALDO P. TRUANT, Ph.D., Associate Professor (Affiliate) of Biology. B.A., University of Western Ontario, 1944; Ph.D., Yale University, 1949. (1959-)

ROGER C. VAN TASSEL, Ph.D., Associate Professor of Economics and Director of the Summer School. A.B., Union College, 1947; M.A., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)

SAMUEL VAN VALKENBURG, Ph.D., Professor of Geography and Director of the Graduate School of Geography. Ph.D., University of Zürich, 1918. (1926-1929; 1932-)

ANTHONY VARJABEDIAN, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-)

JACK R. VILLMOW, Ph.D., Visiting Lecturer in Geography. B.S. in Ed., University of Wisconsin, 1948; M.S., 1950; Ph.D., 1955. (1959-)

SEYMOUR WAPNER, Ph.D., Professor of Psychology. A.B., New York University, 1939; M.A., University of Michigan, 1940; Ph.D., 1943. (1948-)

HENRY JOHN WARMAN, Ph.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)

JOSEPH WEINREB, M.D., Professor (Affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-)

HEINZ WERNER, Ph.D., Professor of Psychology and G. Stanley Hall Professor of Genetic Psychology. Ph.D., University of Vienna, 1915. (1947-)

Henry Wecholer, Ph.D., Assoc. Prof. (Affiliate) of
Psychology + Research Assoc. in Psychology, 1958-59

MORTON WIENER, PH.D., Associate Professor of Psychology and Director of Clinical Psychology Training Program. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)

JOACHIM F. WOHLWILL, PH.D., Assistant Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)

MABEL E. WRAY, M.A., Visiting Lecturer in Education. B.S. in Ed., Worcester State Teachers College, 1933; M.A., Columbia University, 1946. (1959-)

JOSEPH FRANCIS ZIMMERMAN, D.S.S., Visiting Lecturer in Government. B.A., University of New Hampshire, 1951; D.S.S., 1954. (Second semester, 1957-58)

Teaching Assistants

DANIEL V. BARTOLOMEI, Biology. B.S., College of the Holy Cross, 1958.

MARCERY BODANSKY, Psychology. B.A., Middlebury College, 1955; A.M., Clark University, 1957.

FRANK CLARKSON, Psychology. B.A., Middlebury College, 1955; A.M., Clark University, 1957.

SUMNER B. COTZIN, Mathematics. B.S., Yale University, 1938; Ph.D., 1941.

JOHN T. DAVIS, Geography. A.B., University of Toronto, 1955; M.A., George Washington University, 1958.

DWAIN L. FORD, Chemistry. A.B., Emanuel Missionary College, 1949.

JOSEPH GLICK, Psychology. B.A., Brandeis University, 1956; A.M., Clark University, 1959.

HAROLD M. GOLDSTEIN, Sociology. B.A., Northeastern University, 1953; M.A., Boston College, 1957.

WILLIAM A. HUTCHINSON, Biology. A.B., Clark University, 1958; A.M., 1959.

JOHN J. JEFFREY, Chemistry. B.S., College of the Holy Cross, 1958.

LUCY KASPARIAN, Mathematics. B.S., Salem State Teachers College, 1957.

- THOR H. KUNIHOLM, International Relations. A.B., Columbia University, 1956; A.M., Clark University, 1957.
- ALLAN KUPFERMAN, Biology. B.A., University of Bridgeport, 1957; A.M., Clark University, 1959.
- JONAS LANGER, Psychology. B.A., College of the City of New York, 1957; A.M., Clark University, 1959.
- PHELPS T. LASZLO, Psychology. B.A., University of Bridgeport, 1959.
- JOSEPH MCFARLAND, Psychology. B.A., Brandeis University, 1955; A.M., Clark University, 1957.
- JAMES MONIZ, Economics. B.B.A., Clark University, 1956; A.M., 1958.
- VICTOR E. NOSHKIN, Chemistry. B.S., San Francisco State College, 1958.
- RICHARD PRESTON, Geography. B.A., Central Washington College of Education, 1955; M.A., University of Washington, 1957.
- JOHN E. RICKERT, Geography. A.B., Stanford University, 1951; M.A., Rutgers University, 1958.
- WILLIAM VOGEL, Psychology. B.A., Wesleyan University, 1955; A.M., Clark University, 1957; Ph.D., 1959.

Appointments from Graduate Funds, 1958-1959

Alumni Association Scholar

- SANG CHUL SUH, Economics. A.B., Clark University, 1958.

George S. Barton Scholars and Fellows

- AGRIPPINA MACEWICZ, Geography. B.S. in Ed., Worcester State Teachers College, 1943; A.M., Clark University, 1945.
- VINCENT E. POWERS, History. B.A., University of Massachusetts, 1957; M.A., 1958.
- MARIE F. TANGNEY, Education. B.A., College of Our Lady of the Elms, 1952.

Joseph F. Donnelly Fellows

FRANK E. CLARKSON, Psychology. B.A., Middlebury College, 1955; A.M., Clark University, 1957.

DIETRICH HEINERT, Chemistry. B.A., Humboldt University (Berlin), 1952; M.A. (Diplom-Vorexamen), Universitaet Berlin, Germany, 1955.

TOSHIO IRITANI, Psychology. B.A., Tokyo University, 1955; M.A., 1957.

WILLIAM A. KOELSCH, Geography. B.S. in Ed., Bucknell University, 1955.

THOR H. KUNIHOLM, History. B.A., Columbia University, 1956; A.M., Clark University, 1957.

ARTHUR C. LORD, JR., Geography. B.S. in Ed., Bridgewater State Teachers College, 1955.

ABDUL QADIR, Economics. B.A., Delhi University, 1949; M.A., Karachi University, 1953.

Austin S. Garver Scholars and Fellows

SAMUEL E. ALLEN, JR., History. B.A., Moorehouse College, 1958.

ROBERT P. CONDON, Geography. B.A., University of Washington, 1954; M.A., George Washington University, 1958.

PETER W. HOUSE, Economics. B.A., American International College, January, 1959.

SONOKO OHWAKI, Psychology. B.A., Miyagi Women's College, 1958; M.A., Yohoku University, 1951.

Charles H. Thurber Scholar

ANN L. LEGER, History. B.A., Ursinus College, 1958.

Administration

ROBERT I. ANDERSON, M.D., Medical Director

IRMA M. BROWN, Secretary to the President

JOHN A. BURGESS, Editor of the News Bureau

RICHARD J. COURTNEY, Manager of the Bookstore

GLADYS DILIBERTO, Secretary to the Dean of Students and to the
Dean of the College.

JOSEPH GERMAIN, Superintendent of Buildings and Grounds

RAYMOND T. GIFFORD, Treasurer

MARY A. HUBBARD, Bursar

GEORGE M. JOSEPH, M.D., Medical Director

ANNA C. MCATEE, Nurse in charge of Infirmary

DAVID L. MURPHY, Assistant to the President

PATRICK V. SHEEHAN, Assistant Treasurer

HENRY L. SIGNOR, Alumni Secretary

Academic Boards and Committees

UNIVERSITY SENATE: President (*chairman*), Vice President, members *ex officio*; Anderson, Bullock, Bumer, Jones, Jordan, Lee, Maxwell, Nunnemacher, Reid, Roope, Van Valkenburg, and Werner.

GRADUATE BOARD: President and Vice President, members *ex officio*; Lee (*secretary*), Bullock, Bumer, Gwinn, Hayden, Jones, Jordan, Kegeles, Martell, Maxwell, Melder, Murphy, Nunnemacher, Roope, Van Valkenburg, Wapner, and Werner.

COLLEGE BOARD: President, Vice President, Dean of the College, Dean of Students, and Dean of Women, members *ex officio*; Beck, Carter, Coffee, Cowardin, Melder, and Reynolds.

EVENING COLLEGE BOARD: President, Vice President, and Director of The Evening College, members *ex officio*; Beck, Cohen, Comalli, Hargest, Letendre, and Melder.

ACADEMIC COUNCIL: President, Vice President, and Dean of the College, members *ex officio*; Reid (*chairman*), Beck, Jones, Letendre, Nunnemacher, Raffman, Roope, Sugihara, and Wapner.

COMMITTEE ON PERSONNEL AND ORGANIZATION: President, Vice President, and Dean of the College, members *ex officio*; Hayden (*vice chairman and secretary*), Beck, Borger, Bumer, Maxwell, and Werner.

LIBRARY COMMITTEE: Beard (*chairman*), Cohen, and Gorenstein.

STUDENT ACTIVITIES FUND COMMITTEE: Roope (*chairman*), Burnham, Hargest, and Sheehan (*treasurer*).

ADMINISTRATIVE COMMITTEE FOR THE DIVISION OF BUSINESS ADMINISTRATION: President and Vice President, members *ex officio*; Hargest (*chairman*), Balko, Jordan, and Maxwell.

STANDING COMMITTEES OF THE GRADUATE BOARD

COMMITTEE ON CREDENTIALS: President and Vice President, members *ex officio*; Van Valkenburg (*chairman*), Bullock, Jones, Lee (*secretary*), Maxwell, and Werner.

COMMITTEE ON PROFICIENCY IN FOREIGN LANGUAGES: President and Vice President, members *ex officio*; Arndt, Reid, and Representative of student's major department.

STANDING COMMITTEES OF THE COLLEGE BOARD

COMMITTEE ON ADMISSIONS: President, Vice President, and Dean of the College, members *ex officio*; Borger, Hayden, Hughes, Merriam (*chairman*), Potter, Reynolds, and Roope.

COMMITTEE ON ATHLETICS: President, Vice President, and Dean of the College, members *ex officio*; Potter (*chairman*), Borger, Granger, Hughes, Maxwell, and Warman.

COMMITTEE ON SCHOLARSHIPS: President, Vice President, and Dean of the College, members *ex officio*; Bumer (*chairman*), Potter, and Van Tassel.

A Brief History of the University

The establishment of a university requires the cooperation of at least two men, one to furnish the means and the other to furnish the expert knowledge of educational needs. Jonas Gilman Clark, merchant and sagacious businessman, who had made a modest fortune supplying miners and others with manufactured goods during the California Gold Rush, was the man of means. Granville Stanley Hall, professor of philosophy, psychology, and education at The Johns Hopkins University, who had already made an enviable reputation as a vigorous and original scholar, was the educational expert.

Jonas Gilman Clark returned to the east shortly after the end of the Civil War. Upon semi-retirement he returned to his native Massachusetts and established a home in Worcester. With a characteristic New England seriousness of purpose and with a New Englander's almost superstitious belief in education and what it can accomplish, Mr. Clark decided to concentrate his beneficence on the founding of an institution of learning. The later years of his life were devoted to this end with the assistance of his wife, Susan, and a group of leading Worcester men, including, among others, Senator George F. Hoar and General Charles Devens.

The Trustees of Clark University were incorporated in 1887. In the same year construction was begun on a main building and a science building, and G. Stanley Hall was appointed the first president of the university. President Hall, imbued with the ideals of advanced instruction and original research as exemplified by the German universities and the successful experiment at The Johns Hopkins University, set about organizing in Worcester an institution concerned exclusively with graduate studies and research. The men brought together as the faculty constituted a small but brilliant and original group of specialists who soon established the scholarly reputation of Clark University. The doors opened in 1889, and for thirteen years the university devoted its attention solely to graduate study and research. In 1900 when the Association of American Universities was founded Clark University was one of the fourteen charter members.

Although Mr. Clark had supported President Hall's educational

aims and was proud of the achievements of the young university, he was also interested in an undergraduate institution that would be designed to serve young men of limited financial resources. He died in 1900 and a codicil to his will provided for the establishment of a college, in which, in three years' time, young men might secure "preparation for citizenship and their work in life." In addition to the grant for the men's college, the estate increased the endowment of the Graduate School, and of the Library, which would serve both the graduate and undergraduate divisions.

In compliance with the terms of the will the trustees established Clark College with an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, who was then serving as the first United States Commissioner of Labor, became president of the new college, contributing to it both the prestige of a national reputation and the skill of an experienced administrator.

Clark College in the very beginning differed from the American college of that day. Seriousness of purpose and hard work were expected from the undergraduate. Intercollegiate sports were replaced by intramural contests, and the extracurricular distractions common to college life were cut down to sane proportions. Though entrance requirements were informal, a high standard of performance was necessary to remain in college, and, since the degree of bachelor of arts was granted after three years of study, student programs were heavier than was usual.

The educational program formulated by President Wright and Rufus C. Bentley, first dean of the college, was as decisive in shaping the character of the Collegiate Department of Clark University as President Hall's vigorous and explicit emphasis on original research was decisive in shaping the character of Clark University. The educational ideals of the two divisions are complementary, and with the passage of time the graduate school and the college have become an educational and administrative unit. The college benefits from the instructional, laboratory, and library resources of those departments offering graduate education, and the graduate school benefits from the instructional and library resources of the undergraduate departments. Particularly important to the undergraduate is the opportunity to elect during his junior and senior years courses taught at the graduate level. The amalgam of a pro-

ductive graduate school and a rigorous college program in an academic community whose total enrollment is that of the small liberal arts college is a unique educational situation.

President Wright served the college until his death in 1909. His successor was Edmund Clark Sanford, then professor of psychology in the graduate school.

In 1919, after thirty-two years of service, President Hall asked to be relieved of the responsibilities of his office, and in the following year his resignation was accepted. In the same year President Sanford, feeling that the time was opportune for the union of the college and university under a single administration, asked to be permitted to return to professorial work, thus leaving the field free for any reorganization the trustees might think wise. The trustees elected Wallace Walter Atwood, then professor of physiography at Harvard University, president of both the graduate and undergraduate departments of the university.

During President Atwood's tenure there were significant changes in the educational program and in the physical plant. Geography was added to the courses of instruction at both the graduate and undergraduate levels. The period of residence for the degree of bachelor of arts was increased from three to four years to conform with customary American collegiate practice, and participation in intercollegiate activities, including athletics, was encouraged. In 1941 a program now leading to the degree of Bachelor of Science in Business Administration was established in the college. Also, in 1941, the Women's College of Clark University was established by the trustees, and since the fall of 1942 women have been admitted and are eligible for degrees on the same basis as men. Additions to the physical equipment of the university were a men's dormitory, an athletic field, the Alumni Gymnasium, the Library tower, and an auditorium, Atwood Hall.

President Atwood retired in 1946 after twenty-six years in office. He was succeeded by Howard Bonar Jefferson who, at the time of his selection, was professor of philosophy and Director of the School of Philosophy and Religion at Colgate University.

Since the inauguration of President Jefferson the college program has been enriched by the addition of a department of philosophy and the introduction of a series of general education courses which widen the appeal of the various subjects in which these

courses are offered. A chapter of Phi Beta Kappa, the national liberal arts honor society, was established at the college in 1953. In the graduate school, courses in mathematics leading to the master's degree have been reestablished.

The University presently offers instruction leading to the degree of Doctor of Philosophy in chemistry, economics, geography, history and international relations, and psychology. In addition, the Master of Arts degree may be obtained in the following subjects: biology, education, government, mathematics, physics, and sociology. The undergraduate departments of instruction are business administration, classics, English, fine arts, geology, German, philosophy, and Romance languages.

In September, 1953, The Evening College of Clark University was organized to provide for adults a broad selection of courses leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration. Also available is a varied program of non-credit courses, seminars, and special lectures of a community service nature.

Worcester and the University

When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for coöperation between the university and the community which has persisted throughout the history of the institution.

The intellectual life of the city has been enriched by the contributions of the faculty and of distinguished guests whom the University has brought to Worcester. Members of the staff have served local institutions both public and private in many ways.

The College has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere. The Graduate School has aided the more gifted to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system.

In turn, the University has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

There is particularly close coöperation between the Department of Fine Arts and the Worcester Art Museum, between the Department of History and International Relations and the American Antiquarian Society, between the Department of Chemistry and the Worcester Foundation for Experimental Biology, and between the Department of Psychology and the Worcester State Hospital. The Worcester Public Library and the Clark University Library co-operate by avoiding duplication in the coverage of certain subjects and by a corresponding widening of the coverage in the fields assigned to each.

The University is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purpose is to strengthen the bonds of mutual interdependence and coöperation.

The Physical Plant

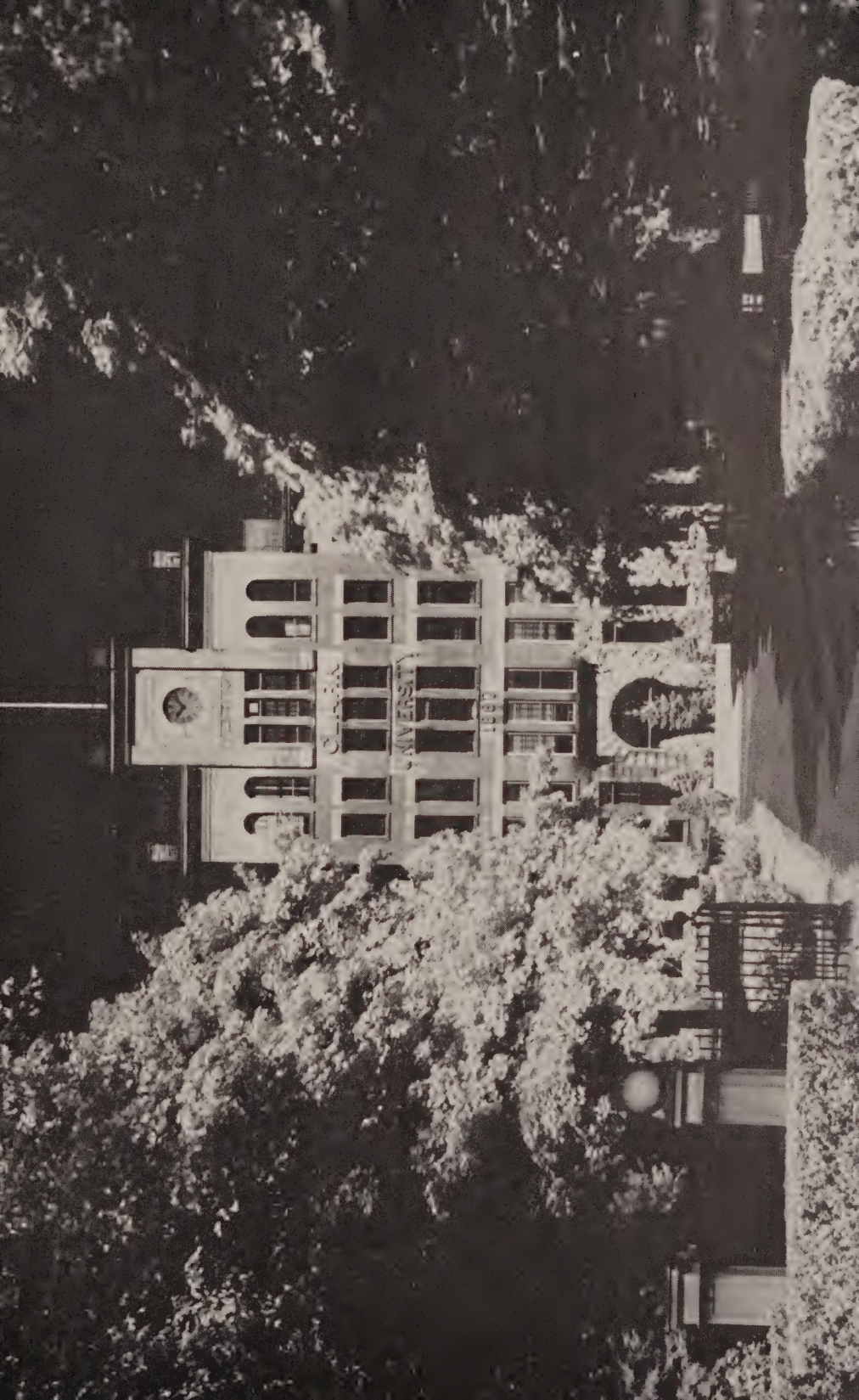
THE UNIVERSITY CAMPUS is situated on Main Street approximately a mile and a quarter from the business center of Worcester. The educational and administrative activities of the University are centered here. On adjacent property facing the campus on Woodland and Downing Streets are dormitories, the infirmary, and residences of the President and of the Dean of Students. A small athletic field, opposite the campus on Maywood Street, provides fine clay tennis courts and a running track. A larger field, at the corner of Beaver Street and Park Avenue, is used for baseball, soccer, and other sports. The Hadwen Arboretum, the gift of Obadiah B. Hadwen, is a tract of about twenty acres at the intersection of Lovell and May Streets. The University also owns a number of individual properties in the vicinity of the campus.

JONAS G. CLARK HALL, completed in 1889, is a four-story granite and brick structure containing about ninety rooms. It houses the general academic offices of the University and the offices and classrooms of many of the departments of instruction. Located on the second floor are a men's and a women's lounge. The Institute of Human Development has been established on the fourth floor following a remodeling of this location in 1957-58. Also housed in this building is a women's gymnasium.

THE SCIENCE BUILDING, also completed in 1889, houses the department of Physics and will house the department of Biology. Located at the corner of Woodland and Maywood Streets, this building is also undergoing a remodeling of its facilities.

THE LIBRARY BUILDING, at the corner of Main and Downing Streets, was enlarged in 1910 by the addition of a wing extending along Main Street. Part of this wing is used for library purposes but the major portion of the wing houses the Graduate School of Geography, the offices of the President, Vice President and other members of the administration. A second addition to provide for the growing book collection was added to the library in 1939. This is a tower which connects the Library Building with Atwood Hall.

ATWOOD HALL, which is entered from Woodland Street, extends along Downing Street to join the library tower. It provides an





auditorium seating 800 which is used for college gatherings and other university functions.

THE ALUMNI GYMNASIUM, completed in 1938, is at the corner of Main and Maywood Streets. It provides a gymnasium floor of ample size with seating capacity for 800 persons. It also houses showers and locker facilities for intramural and intercollegiate athletics and houses the offices of the Department of Physical Education. In addition, the building contains the offices of the Alumni Secretary and a comfortable lounge which provides a convenient and attractive meeting place for University organizations.

ESTABROOK HALL, at the corner of Woodland and Charlotte Streets, formerly was used as dormitory accommodations for men as well as the University dining hall but since the construction of the new dormitory and the student center, the building will now be used to house educational and undergraduate facilities.

JEFFERSON HALL, completed in 1959, serves as the center for many student functions and activities. Within the building is contained the University dining hall, a snack bar, both faculty and student lounges, a recreation room, student mailing room, and the University Bookstore.

THE MEN'S DORMITORY, completed in 1959, is located beside Estabrook Hall. The modern and functional three-story building has facilities for 195 male students with both formal and informal lounges for students' leisure time.

THE WOMEN'S DORMITORY, completed in 1959, is similar in structure to the men's dormitory. It can house 137 women students and also has both formal and informal lounges.

JEPPSON LABORATORY, completed in 1958, contains the Department of Chemistry, with 27,000 square feet of space for laboratories, a library, classrooms and offices. Within the building is a multipurpose lecture hall, Johnson Hall, seating 174 persons.

THE APARTMENT BUILDING, purchased in 1958, formerly housed women students while the new Women's Dormitory was being built. This building will be used in the future for faculty and married student housing.

THE CONFERENCE CENTER, located near the campus, was originally the site of the Institute of Liberal Studies for Executives and is now used for faculty and administrative housing as well as having a center for college and university meetings and functions.

The Library

TILTON M. BARRON, *Librarian*

MARION HENDERSON, *Reference Librarian*

ELIZABETH HASSINGER, *Catalog Librarian*

GUY BURNHAM, *Map Librarian*

The Clark University Library contains over 220,000 volumes and a collection of some 50,000 maps and charts. The collection is centrally housed and administered, and an open shelf system fosters free access to books and periodicals for student and scholar. Only rare books and maps and frequently used reference materials are non-circulating.

The collection reflects the history and growth of the University. The scholar's library of the early graduate school and the undergraduate library of Clark College merged and have developed through the years to serve the academic needs of Clark University. The richest holdings are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, and history and international relations. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. Particular attention is paid to major bibliographical and reference tools, and the Library currently receives nearly 1000 periodicals.

A music library of recordings contains a collection of classical and standard musical works and there is a listening room equipped with a record player.

A Language Center serves as a practice area for those who desire to increase their proficiency in speaking and reading a foreign language. Language records, a phonograph, and a tape recorder are available. A collection of foreign newspapers and periodicals serves to stimulate reading skill and to acquaint the student with the contemporary culture of foreign lands.

The Clark University Library coordinates its acquisition of new material and exchanges material with other libraries in the Worcester area.

Organization

THE GRADUATE SCHOOL offering instruction leading to the degrees of Master of Arts and Doctor of Philosophy.

THE GRADUATE SCHOOL OF GEOGRAPHY offering instruction leading to graduate degrees in Geography.

THE COLLEGE FOR MEN (Clark College) offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE COLLEGE FOR WOMEN offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE UNDERGRADUATE DIVISION OF BUSINESS ADMINISTRATION which supervises the program in Business Administration in the undergraduate colleges.

THE EVENING COLLEGE offering programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration.

THE LIBRARY, with an endowment separate from the endowment of the teaching branches of the University.

THE CLARK UNIVERSITY PRESS, associated with the University for the publication of scientific books and journals.

Admission Information

The following information applies in general to the admission of students to the University. Inquiries concerning admission should be addressed to the following officers at CLARK UNIVERSITY, WORCESTER 10, MASSACHUSETTS:

Undergraduate colleges: *The Director of Admissions.*

Graduate schools: *The Secretary of the Graduate Board.*

The Summer School: *The Director of Summer School.*

The Evening College: *The Director of The Evening College.*

The University's telephone number is PLessant 6-1525.

CLASSIFICATION OF STUDENTS

Four classes of students are accepted in the University:

1. UNDERGRADUATES, candidates for the degrees of Bachelor of Arts and Bachelor of Science in Business Administration in the Men's College or the Women's College.

2. GRADUATE STUDENTS, candidates for the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy.

See the announcements of the graduate schools.

3. SPECIAL STUDENTS, persons, not prospective candidates for a degree, who wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake.

Special students are under the supervision of the College Board.

4. SUMMER SCHOOL AND EVENING COLLEGE STUDENTS, who may or may not be candidates for a degree.

See the catalogs of the Summer School and The Evening College.

AUDITORS, registered for attendance but not for credit, may be admitted at the discretion of the administrative officers of the University. They pay the regular tuition charges but are not enrolled as students in the University and do not pay the matriculation fee.

The University reserves the right to require the withdrawal at any time of any student or auditor whose record in either conduct or scholarship fails to meet the expectations implied by his admission.

ADMISSION TO THE UNDERGRADUATE COLLEGES

An application for admission is bound inside the back cover of the catalog. Applications should be carefully prepared and must be accompanied by the applicant's scholastic record and the non-returnable application fee in order to receive consideration. Formal application should be made at the earliest possible date during the applicant's final year in secondary school.

The completion of a four-year high school program or its equivalent, including sixteen acceptable units of credit, is normally required for admission to the freshman class. The term "unit" is understood to mean a course of study in one subject taken throughout the school year (i.e. English, one year = 1 unit). An applicant must furnish official records from all preparatory schools attended.

The subject matter requirements for admission to the freshman class are as follows:

ADMISSION REQUIREMENTS FOR EITHER THE DEGREE OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Required subjects, 8 units

<i>English</i>	4 units
* <i>Mathematics</i> (algebra and geometry)	2 units
† <i>Foreign language</i> (in one language)	2 units

Restricted electives, 5 or more units in addition to the required units listed above

<i>Mathematics</i>	1 or 2 units
† <i>Foreign language</i>	1 to 4 units
<i>Social studies</i> (history, government, civics, economics, etc.)	1 to 3 units
<i>Natural sciences</i> (physics, chemistry, biology, etc.)	1 to 3 units

Free electives, not more than 3 units

Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Admissions Committee.

*Applicants expecting to specialize in science are advised to present at least three units of mathematics.

†Normally required.

‡A single "beginning unit" in a foreign language is not recognized as acceptable.

College Entrance Examination Board. All applicants for admission must take the Scholastic Aptitude Test of the College Entrance Examination Board. This test may be taken in December, January, February or March of the applicant's senior year in preparatory school. Applicants may also be required to take the Achievement Tests of the College Entrance Examination Board at the discretion of the Committee on Admissions. The Achievement Tests should usually be taken in March of the applicant's senior high school year.

A bulletin of information concerning these examinations may be obtained without charge from the College Entrance Examination Board, P. O. Box 592, Princeton, New Jersey, or for the far west, from P. O. Box 9896, Los Feliz Station, Los Angeles 27, California.

Scholastic Quality Requirements. In addition to the Scholastic Aptitude Test of the College Entrance Examination Board, "certification" by the principal of the preparatory school in at least fourteen of the sixteen required units is normally necessary for admission without achievement examinations. An exception may be made if the applicant ranks in the upper quarter of the class with which he graduated.

ADMISSION WITH ADVANCED STANDING

An applicant for admission who has attended another institution of college grade is required to submit a letter of honorable dismissal, a complete transcript of his academic record at the institution last attended, his high school transcript, and such other information as the Committee on Admissions may request. No admission shall be deemed final until all transcripts have been received. Tentative evaluation of credits for courses of college grade completed elsewhere will be made at the time of a student's first registration at Clark and will be used in planning his course program and in classifying him provisionally as a freshman, sophomore, junior or senior. Students admitted with transfer credits will be regarded as on probation during their first semester. Definite recording of the credits tentatively evaluated will be made only under the following conditions: (a) if a satisfactory semester record (no more than one "D" in a four- or five-course program)

is attained in the first or second semester of residence; or (b) if the records of the student's first two semesters are both non-probationary. When a transcript has been accepted by the student concerned, no further revision of the amount of credit will be considered.

The bachelor's degree will be conferred only after at least one year in residence and the satisfactory completion of at least five full courses, or the equivalent in half courses, at Clark University. The period of residence normally includes the two semesters immediately preceding the granting of the degree.

Transfer students in the Business Administration Program should note the following regulations:

(1) "Business English" and "Business Mathematics" are not accepted for credit toward the degree.

(2) The college reserves the right to examine a student in any course required for the degree which is offered for transfer credit.

(3) A maximum of two courses (12 semester hours) in one area of concentration may be accepted for transfer credit without further confirmation. More than two courses in one area will not be accepted for transfer credit until a confirming course, at a higher level, has been completed at Clark University with a grade of C— or better.

(4) In no case will transfer credit be allowed for more than four courses (24 semester hours) in any one area.

(5) In any subject in which a full year course (6 semester hours) is required at Clark, the University may deny the transfer of credit for a half-year course in that subject.

A graduate of the three year course of the Worcester Art Museum School may be admitted as a candidate for the degree of Bachelor of Arts with the rank of *junior* in the college. In such cases the usual admission requirements must be met and the general subject-matter requirements of the colleges must be satisfied.

ADMISSION DEPOSIT

When a student's application is complete and he has been tendered formal admission to Clark University, he will be required to indicate his acceptance of the offer of admission by making a

deposit of \$50.00 to hold a place for him in the incoming class. This deposit is credited toward tuition charges for the first semester. The deposit is forfeited in case the student does not enroll for the specified semester. This applies to all except Graduate and Special Students. The deposit may also be used to reserve dormitory space. This fee becomes effective September, 1960, and will replace the present dormitory deposit charge. (See page 42.)

ADMISSION OF SPECIAL STUDENTS

Applicants for admission as special students should address their inquiries to the Dean of Students (male) or Dean of Women and should be prepared to supply evidence of qualification for the study which they wish to undertake.

ADMISSION OF FOREIGN STUDENTS

Applications from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the University requirements for proficiency in the English language. Every foreign student must have medical insurance, preferably that of the Institute of International Education.

Tuition and General Charges

Tuition, fees, and general charges are listed below. Certain special fees are also listed under the Graduate School of Geography. Tuition and general charges for The Evening College and Summer School are to be found in the catalogs of those divisions.

All tuition, general charges, dormitory charges, laboratory fees, and miscellaneous fees are due and payable on or before the first day of each semester. No one is permitted to register for any semester until financial obligations have been satisfactorily arranged. Veterans relying on government aid should have enough resources to meet initial payments because the first government checks are often delayed. A penalty fee is charged for late registration and for late payment of tuition.

Application fee. This fee must accompany the application for admission to the undergraduate colleges of the University. The fee is not returnable.

Tuition. Tuition is established on the basis of a student's participation in a normal academic program for four or five courses per year, September to June. Students who enroll for more or less than the normal program pay tuition on a per course basis of approximately one-fifth full tuition.

Tuition refund policy. In the event of withdrawal from the University within the first four weeks of any semester, tuition is refunded on a percentage basis: 80% if a student withdraws during the 1st week; 60% if during the 2nd week; 40% if during the 3rd week; and 20% if during the 4th week.

Activity fee. This fee is paid by undergraduate students and special students carrying more than four courses to cover the costs of certain extra-curricular activities and services. It covers admission to university athletic events and student dramatic productions, subscriptions to the student newspaper and yearbook, and supports certain other approved student programs.

Tuition:

Full program (4 or 5 courses)	\$525.00 per semester
Per course	105.00 per semester

General Charges: (Undergraduate Colleges)

Application fee (non-returnable)	\$ 10.00
Matriculation fee	5.00
Board at University Dining Hall	240.00 per semester
Activity fee	10.00 per semester
Induction fee (freshmen)	25.00
Induction fee (transfer students)	10.00
Diploma fee (paid senior year)	5.00

Dormitory Charges:

Deposit (credited to rent)	\$ 25.00
Key deposit	1.00
Room rent (single occupancy)	200.00 per semester
Room rent (double occupancy)	150.00 per semester

Laboratory Fees:

For Physics, Biology, Geology, Psychology, and Chemistry 11	\$ 15.00 per semester
All Chemistry except Chemistry 11	20.00 per semester
For supplies and breakage:	
Chemistry courses except Organic Chemistry	10.00 per year
Organic Chemistry only	20.00 per year

Miscellaneous Fees:

Late registration	\$ 5.00
Late payment of tuition	5.00
Insurance fee (optional)	16.00
Transcripts (two transcripts without charge)	1.00

Graduate School Fees:

Matriculation fee	\$ 5.00
Diploma fee (master's degree)	5.00
Publications fee (master's degree)	10.00
Diploma fee (doctor's degree)	25.00
Publications fee (doctor's degree)	30.00

THE UNDERGRADUATE COLLEGES

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THE UNDERGRADUATE COLLEGES

The Men's College and the Women's College constitute the undergraduate divisions of Clark University. Financially the two colleges are independent, educationally they operate as a unit.

Admission and degree requirements are identical in the two colleges. The colleges offer educational programs in the liberal arts and in business administration.

The liberal arts program provides education in each of the principal areas of human culture combined with the intellectual discipline resulting from concentration in a selected field of special interest. The program possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests. This program leads to the degree of Bachelor of Arts.

A program leading to the degree of Bachelor of Arts in which the essentials of a liberal education are combined with sound professional foundations in art is offered in cooperation with the Worcester Art Museum. Details of this program are given in the announcement of the Department of Fine Arts.

A description of the special program leading to the degree of Bachelor of Science in Business Administration will be found in the Business Administration announcement, "Departments and Courses" section.

Information which is of interest to all students in the colleges is given in the succeeding pages.

Induction and Registration

INDUCTION

Freshmen, both men and women, entering the University meet in the few days preceding the opening of the academic year for an induction program. It has been customary to spend the induction period at a well-equipped camp or summer hotel where there are ample facilities for recreation. Separate establishments and programs are provided for men and women.

During this period the members of the class become acquainted and meet a selected group of upperclass students as well as members of the college staff. Formal activities include tests which assist in placing a student in the proper class sections, individual and group conferences, and registration for a program of studies.

A modified induction program is provided for upperclassmen and upperclasswomen entering the University. Transfers to the undergraduate colleges do not attend the special camps but report early for testing, orientation, and registration.

FACULTY ADVISERS

A student admitted to either the Men's College or Women's College is assigned to a member of the faculty who advises the student on a program of courses and other matters. At the beginning of the freshman year the advisers are chosen from a limited group of freshman advisers. Later each student is encouraged to select an adviser of his or her own choosing. A change of advisers may be made on formal request addressed to the Dean.

The adviser assists the student in choosing his program of studies and is available at all times for consultation on any matter which the student may wish to discuss with him. Ideally the adviser-student relationship develops into a relationship of mutual regard which frequently endures long after the college course has been completed.

REGISTRATION

Each student is required to register for a detailed program of courses at the beginning of every semester. Official notice is given well in advance of the dates on which registration is required. Failure to register within the period designated involves a charge of five dollars.

Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

Student Programs

An undergraduate student normally carries a program of five courses throughout the academic year, September to June, in addition to required physical education. In general it is expected that a course meeting three times weekly will require a minimum of two hours of preparation for each lecture or recitation. Laboratory periods are usually three hours in length.

A student carrying the regular program should, therefore, expect his college work to require from forty-five to fifty hours of his time per week, in addition to the time required for physical education.

College regulations are designed to permit a large degree of freedom in the adjustment of programs of study to individual differences of interest. Even in the freshman year, when the program is largely determined by the degree for which the student is enrolled, each student makes certain individual choices where alternative requirements or free electives are involved. Such choices deserve the most careful consideration since they frequently affect the general pattern of a student's program for the entire four years of the college course.

FRESHMAN PROGRAM

A freshman must choose his entire program from courses designated as "open to freshmen."

The following program is required of all candidates for the bachelors' degrees:

1. *English 11*, Composition and Literature.
2. Candidates for the Bachelor of Arts degree—a course in a foreign language.
Candidates for the Bachelor of Science in Business Administration degree—*Principles of Accounting*.
3. A course in "Group A," science and mathematics.
4. A course in "Group B," social sciences.
5. An elective.

Mathematics 11 must be elected by students who expect to major in Group A and students who are candidates for the B.S. in B.A. degree. This includes both pre-medical and pre-dental students. Students especially qualified by preparation, performance and interest may elect a second laboratory science in place of a course in Group B.

SOPHOMORE PROGRAMS

A sophomore must give priority in his program to any subject requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a "major" or an "integrated program" will be chosen. The remaining elective choices provide the opportunity for each student to broaden the range of his interests.

The selection of a major subject is required of candidates for the degree of Bachelor of Arts at the time of registering for the sophomore year. Candidates for the degree of Bachelor of Science in Business Administration select an "area of concentration" at the same time.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating "primarily for undergraduates;" they are not admitted to courses "for advanced undergraduates and graduate students," designated by numbers beginning with the numeral 2.

JUNIOR AND SENIOR PROGRAMS

Programs for the junior and senior years should be planned as a unit. This brings the entire college course under scrutiny; concentration, balance and diversity can be seen in relation to each other and adjusted to desired proportions; the inevitable choices between desirable courses, since all cannot be included in the program, can be made and costly mistakes due to haste and the overlooking of important facts can be avoided. Failure so to plan may result in the omission of important courses because of conflicts in the schedule or the alternation of courses in successive years.

Juniors and seniors may elect any courses "primarily for undergraduates" or for "advanced undergraduates and graduate students" subject to any conditions stated in the descriptions of the courses. Under special conditions and with the approval of the College Board

and of the Secretary of the Graduate Board in each case, seniors who rank in the upper third of their class may be admitted to courses "primarily for graduate students" designated by numbers beginning with the numeral 3.

ACCELERATED PROGRAMS

At least three years of college study in residence is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and one-half years, if he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a summer school is granted only when it is officially authorized in advance in each individual case.

To complete the requirements for a bachelor's degree at the end of three years it is necessary for a student to carry a six-course program through all three years and to attend two six-week summer schools. Only students of exceptional ability and in excellent physical condition are advised to undertake such a program. To complete the requirements for a bachelor's degree at the end of three and one-half years it is necessary for a student to accumulate, within that time, credit for two and one-half courses in addition to a regular program. This may be accomplished without attendance at summer school if the student carries a six-course program through two and one-half years. More commonly a student will attend two summer schools and carry a six-course program for one semester or attend three summer schools.

SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better is permitted to register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for such a program in either semester if his average grade for the preceding semester is C— or better.

A freshman may normally register for a program of six courses in the first semester of his freshman year. In subsequent semesters he is subject to the regulation stated above.

For tuition charges see "per course" rate given under "Tuition and General Charges."

WASHINGTON SEMESTER PROGRAM

The University participates in the Washington Semester program of The American University at Washington, D. C. Under this program a small number of superior students may be nominated to attend a semester (normally in the junior year) in the study of the United States government in the nation's capital.

This opportunity is particularly, but not exclusively, attractive to students majoring in government, international relations, history, economics and sociology. Full credit for the semester's work is given toward the degree at Clark. Inquiry and application should be made to the Dean of the College.

PARTIAL PROGRAMS

Under special circumstances programs of fewer than five courses may be permitted. In general no change of status or of obligation is involved when a student's program is reduced to four courses, nor is there any reduction in the charge for tuition.

A student whose program consists of fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education, are not required to attend the weekly assembly and do not pay the "activities fee."

For tuition charges see "per course" rate under "Tuition and General Charges."

PROGRAMS FOR SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are not required to attend the weekly assembly nor are they subject to a requirement in physical education. Special students who register for programs of four or more courses are required to pay the activities fee; others are not required to pay this fee.

For tuition charges see "per course" rate under "Tuition and General Charges."

PRE-PROFESSIONAL PROGRAMS

One function of the undergraduate colleges is to prepare students going on to a professional school or into graduate study. The proper foundation for subsequent training in many of the professions may be gained at Clark University. A student planning a professional career should consult with his adviser as early as possible in his college course in order to best shape an undergraduate program.

Although professional schools hesitate to lay down rigid requirements for admission, there are some professional areas, such as medicine and dentistry, which by the nature of the subject call for some undergraduate emphasis on preparatory subjects. In the case of teaching, Clark University itself provides those courses necessary for state certification, as well as offering a graduate program in education.

For information on pre-medical and pre-dental programs see under the Departments of Biology and Chemistry. For information on requirements for teaching consult the introductory material in the Department of Education course section. A pre-legal statement may be found under Sociology in the course listing for Economics and Sociology.

Requirements for a Bachelor's Degree

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration as stated below will be recommended for the appropriate degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

The following requirements apply to all candidates for a bachelor's degree:

1. *Residence.* A student must be in residence at least three academic college years. At least one full year and usually the last year before the degree is conferred must be spent at Clark University. Five one-year courses must be satisfactorily completed for each year in residence.

2. *Course Requirements.* All college regulations concerned with credit toward a degree are expressed in terms of courses. A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. If fractional courses are offered, these will be combined in computing total course credits. Undergraduates admitted to classes primarily designed for graduate students receive one-half course credit per semester irrespective of the number of weekly class meetings. Twenty full courses at a satisfactory level of scholarship are required for graduation.

3. *Physical Education.* Each undergraduate must complete three years of physical education, two hours per week.

4. *Assembly.* All undergraduates are required to attend the regular assembly.

Course credit may be obtained at the undergraduate level in the fields of instruction which for administrative purposes are classified into four "groups" as follows:

GROUP A (Science and Mathematics). Biology, chemistry, experimental psychology, geology, mathematics, and physics.

GROUP B (Social Science). Economics, education, geography, government, history, international relations, philosophy, psychology, and sociology.

GROUP C (Language and Literature). Greek, Latin, English, French, German, Spanish, and an interdepartmental course in language and literature.

GROUP D (Fine Arts). Art and Music.

In addition to the general requirements for a bachelor's degree previously listed, there are certain specific requirements for the degree of Bachelor of Arts and other equally specific requirements for the degree of Bachelor of Science in Business Administration.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. A MAJOR. A *departmental major* consists of *seven* courses designated by the department for this purpose. Four or five of these must be courses in the major subject, the remaining courses must be in fields of study closely related to the major department. A grade of higher than C— is required in at least eleven of the fourteen semester grades involved in the completion of an acceptable major.

Mathematics 11 is a freshman year requirement for all students intending to major in Group A (Science and Mathematics) including those who are taking pre-medical and pre-dental programs. Mathematics 11 may, with the major department's approval, be included in the seven courses constituting the major.

Students majoring in Group C (Language and Literature) who have not offered at least two units of Greek or Latin for admission are required to take a year's course in either classical civilization or elementary Greek or Latin. The course satisfying this requirement may, with the approval of the major department, be included in the seven courses constituting a major. The student's choice

of classical civilization or Greek or Latin is subject to the approval of the major department. If a language course is chosen, this requirement should normally be satisfied during the freshman year.

An *interdepartmental major* includes *eight* or more courses chosen with regard to related content and purpose in fields which cross departmental boundaries. Two such programs are now available. These will be found fully outlined in the catalog section entitled "Departments and Courses."

2. GROUP A (Science and Mathematics). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study. One of them *must* be a laboratory course. Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

3. GROUP B (Social Science). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study.

4. FOREIGN LANGUAGE. Each student must complete a course in a foreign language at or beyond the third year college level. Language study must begin in the freshman year. A student whose previous education has been in a language other than English may be relieved of the foreign language requirement upon the successful completion of the freshman English course.

5. ENGLISH. The requirement for a Bachelor of Arts degree includes one and one-half courses, English 11 in the freshman year and an additional half course. All students are required to maintain satisfactory proficiency in English.

6. FINE ARTS. A half course in Fine Arts or Music or a year course in a foreign civilization must be completed.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

An integrated program developed around a "core curriculum" of twelve and one-half required courses consisting of the following:

English 11	Composition and Literature
Mathematics 11	Freshman Mathematics
BA 100	Principles of Accounting
Economics 11	Principles of Economics

BA 160	Business Statistics
Government 15	Introduction to Government
BA 170b	Principles of Management
BA 150a	Principles of Marketing
Economics 13a	Money and Banking
BA 120a	Corporation Finance
BA 140	Business Law
BA 290	Analysis of Business Problems
English 12a	Public Speaking

One year course in a laboratory science.

One year course in a social science, during the freshman year.

The student is also required to present no less than four and no more than five courses in an area of concentration. See the announcement of the Division of Business Administration in "Departments and Courses" for a description of these concentration areas and their programs.

High ranking students in Mathematics 11 may, with the consent of the Director of the Division, meet the requirement for Business Statistics by substituting Economics 29a, Statistical Methods, for BA 160, Business Statistics.

Academic Regulations

GRADES

At the end of each semester grades are reported for each student in each course in terms of A, excellent; B, good; C, average; D, poor; F, failure. The modifying symbols plus (+) and minus (—) are used with each of these letter grades with the exception of F, giving twelve levels of passing grades. A report of "incomplete" is permitted only when severe sickness or some other equally unavoidable circumstance prevents the completion of a course.

A record of "failure" in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade. A record of "incomplete" incurred in the first semester must be made up by the end of the academic year; if incurred in the second semester or summer term, it must be made up by "mid-semester" of the following fall. For a course not completed within the specified time the record of "incomplete" is changed to one of "failure."

SCHOLARSHIP STANDARDS

Courses with the grades of D+, D or D— may not be counted toward a bachelor's degree beyond one-quarter of the total credit required; i.e., not more than five (5) such courses, or their equivalent in fractional courses, may be counted. In the administration of this regulation only grades received and credit earned in Clark University are considered. If grades are not available for some of the twenty courses required for the degree, the maximum credit which may be counted with grades of D+, D or D— is reduced to one-quarter of the total credit from all courses in which grades are available.

Classification of students. A student continues to be listed in the class with which he or she entered college until the end of the third, or junior, year. At this time only those students who have credit for at least fourteen courses with a minimum of eighteen semester grades of C— or better are promoted to the senior class.

Probation. Students with unsatisfactory grades are placed on probation. Failure of a student to remove himself from probation after two consecutive terms or three non-consecutive terms normally results in separation from college.

EXAMINATIONS

Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course.

Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

ATTENDANCE

Students are expected to be present on the first day of each term and to continue in attendance from day to day to the end of the term.

Attendance at a fortnightly college assembly is required, except in the case of part-time and special students.

Regulations applying to absences from scheduled class meetings and laboratory exercises are based upon the conviction that such absences, regardless of their cause, involve a loss to the student and a drag upon the class. Students are, accordingly, expected to be consistently regular in attendance. Subject to this general provision, students are given a considerable degree of freedom in the control of their attendance. It is expected that such freedom will not be abused, and that it will contribute to the growth of each student's sense of responsibility.

Special regulations apply to attendance at assembly and physical education.

Honors

The colleges award "annual honors" to outstanding students in each of the three lower classes, and grant the bachelor's degree with distinction under the conditions described below.

ANNUAL HONORS

First honors and *second honors* are awarded at the end of each year to members of the freshman, sophomore, and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree is awarded *cum laude*, *magna cum laude*, and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A program leading to a bachelor's degree with honors in a particular subject may be undertaken by a student at the beginning of the junior year. This opportunity is open to candidates for either the degree of Bachelor of Arts or Bachelor of Science in Business Administration. Under this plan the department appoints an honors' adviser who cooperates with the student in working out a unified program of courses for the junior and senior years. This program may include a maximum of two "honors courses" in which he works with a large measure of independence under the supervision of the adviser. In the senior year each candidate must pass satisfactorily a comprehensive examination given by his major department.

Any student may apply in writing to his major department for permission to take honors work, not later than the first day of May in the sophomore year. The approval of the department is necessary for admission to such work. In exceptional cases, application may be made and admission approved by the department concerned up to the end of the first semester of the junior year, but only with the consent of the College Board.

Admission to candidacy for departmental honors does not relieve a student from any of the standing regulations of the college except as specifically stated above. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to his department. If candidacy is terminated for any reason, the amount of credit to be allowed for "honors courses" will be determined by the College Board in consultation with the major department.

On conclusion of the honors program, including a comprehensive examination, the department may recommend the student's graduation with honors, high honors, or highest honors. Only students meeting the standards of the College Board for the degree *cum laude* may receive departmental recommendation for high or highest honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies—those studies concerned principally with a knowledge, understanding, or appreciation of the natural and social world in which we live. The Society establishes chapters in colleges and universities throughout the United States where the curricula are broadly cultural in scope and where high standards of scholarship are maintained.

In harmony with the underlying purposes of the Society, the Clark chapter, Lambda of Massachusetts, established in 1953, seeks to foster among undergraduates an appreciation of the contributions to culture and civilization which have been made by liberal studies.

Each year the Chapter elects to membership a limited number of juniors and seniors whose programs have been definitely liberal in character and who have achieved distinction in scholarship.

As a result of the installation of a chapter of Phi Beta Kappa at Clark University in 1953, the Clark Scholarship Society, organized in 1914, became inactive and assumed the status of an alumni organization.

Scholarships and Loans

Scholarships are provided by the University from endowed funds and from other sources. Financial aid to students is available also in the form of grants from a number of special funds. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this is of a kind which yields useful experience.

Loans for educational purposes are available from a number of funds which have been created for this purpose. Loans are made to undergraduate students at an annual interest rate of 3%. It is expected that all borrowers will begin repayment of loans shortly after graduation.

Many scholarships and educational loans are provided by local sources in communities throughout the nation. Any interested person should address inquiries to school officials, churches, fraternal organizations, chambers of commerce, etc.

Information on graduate fellowships, scholarships, and loans may be found in the announcement of The Graduate School.

SCHOLARSHIPS

Undergraduate scholarships are generally awarded on the basis of financial need with due regard to character and ability. The scholarships vary in amount and are in some cases restricted to residents of a definite locality or to those studying particular subjects.

To be eligible for a scholarship, an entering freshman must have a scholastic record which places him in the upper third of his preparatory school class. A college student is eligible if he has secured a rank in the upper half of his class for the preceding semester.

Scholarships are awarded at the beginning of each semester. Ordinarily an award for the first semester is continued through the second semester if the holder maintains a position in the upper half of his class for the first semester.

Applications for undergraduate scholarships should be filed at an early date on forms which may be secured from the college office.

Incoming freshmen applying for scholarship aid do so through

the College Scholarship Service, Box 176, Princeton, New Jersey (or Box 27896, Los Angeles 27, California, for the West Coast). The Service provides the University with an independent analysis of the applicant's financial needs. Application forms may be obtained at the student's secondary school, or from the Director of Admissions.

Aid given in the form of scholarships is not regarded as a loan. It is recognized, however, that those who receive such aid may wish to return the amount in later years. Funds for scholarship purposes are much needed and greatly appreciated.

The following scholarships are currently available to students in the undergraduate colleges with the restrictions noted.

The Ellis-Hubley Competitive Scholarships. These are competitive scholarships restricted to male residents of Worcester who have graduated from Worcester secondary schools. The stipends, \$1,150 annually to each beneficiary, are provided by money set aside from the income of funds bequeathed in memory of Gordon A. Hubley, Clark 1910, and of Theodore T. and Mary G. Ellis. One appointment is made each year to a member of the freshman class and the award is normally continued throughout the four years of the college course.

A candidate must receive the recommendation of the Principal or Head Master of the school in which his preparation for college is completed before his application can be considered. Two full tuition scholarships are awarded annually to applicants who, in the judgment of the Committee on Scholarships, stand next below the successful applicant.

The Jonas G. Clark Scholarships. These scholarships have been established by the trustees to provide financial aid for undergraduate male and female students from outside of Worcester.

The Theodore T. and Mary G. Ellis Scholarships. These scholarships provide financial aid for male or female residents of Worcester who are students in "the collegiate department of Clark University."

The Sanford Memorial Scholarship. The Sanford Memorial Fund was established by alumni of the University in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920. The Fund provides an annual scholarship amounting at present to approximately \$200 for a male senior undergraduate.

The Livermore and Ambulance Scholarship. The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, the first Clark man to fall in battle in the first World War, and of his companions in the Clark Unit of Ambulance Drivers. Fifty dollars or more is awarded annually on the basis of academic success, character, and usefulness to the college. This scholarship is for male undergraduate students who are residents of Worcester County.

The Henry A. Willis Scholarships. Male students from Fitchburg, Massachusetts, and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship. A fund, established by the late Professor Charles B. Randolph in memory of his mother, provides about \$250 annually for scholarships restricted to male college students, preferably those whose major is a foreign language.

The Gordon A. Hubley Scholarships. These scholarships are provided by a fund which was bequeathed by Alice B. Hubley in memory of her son, a graduate of the college in the class of 1910. The income is for the assistance of male undergraduates who are residents of Worcester.

The Alice Friend Newton Memorial Scholarship. This scholarship provides full tuition for a student in the Women's College whose major is psychology.

The William Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his father. The income of a fund of \$7,500 is available "preferably for the education - - - of boys of the Protestant faith."

The Jennie L. Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his mother. The income of a fund of \$7,500 is available "preferably for the education - - - of girls of the Protestant faith."

The Ernest R. Whitman Memorial Alumni Scholarship. The fund, established by the Alumni Association in honor of the Director of Physical Education for Men at Clark College from 1904 until his death in 1948, provides financial aid to men or women students possessing high qualities of leadership.

The B'nai B'rith Scholarship. The Worcester Chapter, Order of B'nai B'rith, provides a scholarship which is primarily but not exclusively for the aid of Jewish students.

The Probus Club Scholarship. The Probus Club of Worcester offers an annual scholarship of two hundred dollars.

The Clark University Faculty Women's Club Scholarships. These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Clark University Alumnae Association Scholarships. Two scholarships are customarily offered by the Alumnae Association to students in the Women's College.

The National Council of Jewish Women Scholarship. The Worcester Section, National Council of Jewish Women, awards a \$200 scholarship each year to a Jewish girl from Worcester or Worcester county who is attending Clark University.

The Soroptimists Club Scholarship. The Soroptimists Club of Worcester provides an annual scholarship for a student in the Women's College.

The Aaron Fuchs Memorial Scholarship Fund, given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons Lawrence and Jerome Fox of the classes of 1944 and 1953 respectively, provides scholarship aid for non-residents of Worcester or of Worcester County. Awards under this fund are made by the Scholarship Committee.

EDUCATIONAL LOANS

Loans are available for undergraduate students from the funds listed below. These loans bear interest at the rate of 3% per year. Applications for loans should be made at the office of the Bursar.

THE ALUMNI LOAN FUND was established by the trustees and the alumni.

THE ESTABROOK LOAN FUND was created by the generosity of the late Arthur F. Estabrook of the Board of Trustees.

THE HASKELL TALAMO LOAN FUND has been established by relatives and friends of the late Doctor Haskell Talamo, A.B., Clark University, 1916.

THE LOUIS N. WILSON FUND, established by the first librarian of Clark University, is a loan fund for male students in the college.

NATIONAL DEFENSE STUDENT LOANS

These loans are available to students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics, or a modern foreign language. Applications for loans should be made at the office of the Bursar.

Student Services

DINING HALL

The University Dining Hall is operated for the convenience of the students and staff of the University. Service is cafeteria style.

Undergraduates who do not live at home are required to eat at the Dining Hall. This fact must be recognized and subscribed to by all who seek admission to either the Men's College or the Women's College. Other members of the University are welcomed on a permanent basis or for single meals.

DORMITORIES

Men not living in their own homes or with near relatives are required to live in the men's dormitory or in fraternity houses.

Rooms are reserved on receipt of the dormitory deposit fee. The deposit is later applied to room rental charges.

Women students not living in their own homes or with near relatives are required to room in the College dormitory facilities. Other arrangements are permitted only on written request from a parent or guardian and the consent of the Dean of Women.

A Dormitory Council composed of student representatives, Housemothers, and the Dean of Women meets regularly to discuss matters pertaining to dormitory living.

Room reservations and deposit procedures are the same for women's and men's dormitories.





INFIRMARY

The Infirmary, located at 6 Downing Street, opposite the University Library, is open during the academic year. A nurse is in attendance and the University physicians are on call. Facilities are provided for the treatment of emergencies and for minor medical services to all students while they are on the campus; in addition, there is provision for the temporary hospitalization of resident students in cases of more serious illness.

No special fee is charged for the health services available at the Infirmary. A student has the option of subscribing to a low-cost health and accident insurance, which will cover other medical contingencies. The insurance fee is \$16.00, for a full year.

GUIDANCE AND PLACEMENT BUREAU

JAMES M. COFFEE, Ed.D., *Director*

The guidance service provides individual counseling on problems concerned with planning a vocation, and on problems of adjustment to college life. This service supplements the advisory services of the individual teachers and deans of the University.

The placement service assists the student in job exploration. The service informs the student of available positions and arranges interviews with representatives of organizations in business, government, and education. Students are urged to establish a permanent personal reference file. The Bureau provides the forms for those papers which are kept on file and are available for the student's use at any time before or after graduation.

Part-time employment opportunities are also listed with the Bureau for students who wish to work in order to help meet college expenses.

PSYCHOLOGICAL CLINIC

In 1950 the Department of Psychology instituted the Clark University Psychological Clinic for the purpose of providing testing and counseling services to students of the college who wish help in their academic or personal adjustment. Where indicated, other more appropriate university or community resources can be recommended to the student.

The staff of the Clinic includes the Director, Dr. Robert W. Baker, other clinical psychologists in the Department of Psychology, and consultants in psychiatry, psychiatric social work, and clinical psychology.

Student Activities

Student life at Clark is, as would be expected at a small institution, friendly and informal. Fixed rules and regulations are few, the assumption being that students will conform to the recognized standards of morality, good order, and consideration for others. College activities are under the minimum degree of faculty oversight which is necessary to insure responsibility in business dealings and consideration of the welfare of the individual student and of the college community.

Opportunities for recreation are found in dramatic clubs and musical clubs, under expert direction; in editing and publishing the college newspaper (*The Clark Scarlet*), the literary magazine (*Helicon*), and the senior yearbook (*Pasticcio*); also in such organizations as the Debating Council and International Relations Club.

Formal "proms," informal "Bohemes," and fraternity activities furnish further opportunities for social life. Jefferson Hall, newly-opened student center, is the site of a student lounge, recreation room, bookstore, student mailboxes and snack bar. The Jefferson Hall lounge, plus a men's lounge and a women's lounge in Clark Hall, provide meeting places for formal or informal groups. For many students, the most prized opportunity for social contacts is in the offices and laboratories, where members of the faculty may be visited with ease and freedom.

The Men's and Women's Senior Honor Societies, Gryphon and Pleiades, select each year from the junior class a group of outstanding men and women who constitute the membership of the societies for the following year. The societies play an important part in campus life and in maintaining the traditions of the college. Among the regular functions of Gryphon are the supervision of the annual

"rope pull" between the freshman and sophomore classes and the management of "Spring Spree Day." Pleiades sponsors the Christmas tea and an annual lecture, assists at general college social functions, and in recent years has provided scholarship aid to one or more women students.

The Scarlet Key is a sophomore-junior service organization. In addition to acting as guides for campus visitors, Scarlet Key members undertake various activities and projects beneficial to the University.

The Activities Fee. Non-athletic activities are partially supported by an activities fee. This fee also admits a student, without additional charge, to all athletic contests held on the college grounds, provides him with the college newspaper and yearbook, and admits him to plays and concerts presented by the dramatic and musical clubs.

Eligibility for Non-competitive Activities. All students may participate as long as their scholarship proves satisfactory. Details are published in the Students' Handbook.

Physical Education and Athletics

PHYSICAL EDUCATION

Physical education is required of all students for the general promotion of their health and mental efficiency. Three years of physical education, two hours per week, is a prerequisite for graduation. Physical education is scheduled at times which avoid conflict with recitation hours. Students are usually excused from this requirement only on the recommendation of the medical director.

The physical education programs for both men and women are closely correlated with intra-mural sports. The physical education program for women requires, during each of the three years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing, and modern dancing are offered. Swimming and life saving courses are avail-

able through the entire year by arrangements with the Young Women's Christian Association. These courses are conducted by a member of the physical education staff of the University.

ATHLETICS

THE MEN'S COLLEGE. Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf and crew. Competent coaches have immediate supervision over the athletic teams. In addition to the program of intercollegiate athletics there is an extensive program of intra-mural sports.

Eligibility for Competitive Activities. Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure.

Any student carrying less than a full program of studies is ineligible unless his reduced program permits graduation at the end of the year in which that program is carried.

Students admitted with advanced standing from another college are ineligible during the first half-semester of residence at Clark College.

A special student is normally not entitled to participate in competitive activities of the college. The College Board may, however, permit such participation in the case of a special student who is enrolled for a program of five courses.

THE WOMEN'S COLLEGE. Students in the Women's College have the opportunity of participating in several types of athletics. Offered in the fall and spring are hockey, crew, archery, tennis, fencing, softball, and golf. Tournaments are held in the spring and fall and a cup is awarded to the winner of each event. During the winter months basketball is the principal organized athletic activity; volleyball and badminton are also offered. Women students use their own gymnasium for practice, but have the use of the University Gymnasium for games with outside organizations.

The Women's Athletic Association arranges for all sports activities both within the college and with other colleges in the New England area.

GRADUATE SCHOOLS

The Graduate School

The Graduate School of Geography

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. The Graduate Board, under the chairmanship of the President of the University, is the administrative organ of the Graduate School.

Today, the University continues to emphasize graduate education by offering to both men and women special facilities and advanced instruction required for independent study and research.

Programs leading to the degrees of Master of Arts and Doctor of Philosophy are available to qualified holders of a bachelor's degree or its equivalent of attainment.

MASTER OF ARTS degrees are offered in the fields of biology, chemistry, mathematics, physics, economics, history, government, international relations, geography, sociology, psychology, and education.

DOCTOR OF PHILOSOPHY degrees are conferred in chemistry, economics, history, international relations, geography and psychology.

Departments which are not at present organized to accept candidates for graduate degrees, do offer numerous courses, not listed above, which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information peculiar to the Graduate School of Geography is contained in the next section of the catalogue.

General inquiries and correspondence concerning the Graduate School should be addressed to:

The Secretary of the Graduate Board,
Clark University,
Worcester 10, Massachusetts.

Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission does not imply admission to candidacy for a degree.

Application. A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work, and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination, given by the Educational Testing Service, Princeton, New Jersey.

Applications for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in September. Applications may be submitted, however, at any time throughout the year and periodically are considered by the Graduate Board.

Admission. In granting admission, the Graduate Board may, with the advice of the department, prescribe a minimum period of residence, never less than one year, and other definite requirements, including courses in particular subjects, as prerequisites for a graduate degree.

Admission to the Graduate School is granted for entry only at a specified time, and lapses if the student fails to enter at that time. If, after an applicant has entered the University as a regular student, his period of graduate study is broken by more than a year, he must make formal application for reinstatement.

Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

THE DEGREE OF MASTER OF ARTS

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly

defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of Master of Arts at the discretion of the major department.

Candidacy. Application for admission to candidacy for a master's degree should be filed with the Secretary of the Graduate Board not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has:

1. Completed one semester of full-time graduate work or its equivalent in residence at this university;
2. Obtained the written endorsement of his major department;
3. Paid the diploma fee (\$5) and publication fee (\$10).

Candidacy for the degree of Master of Arts holds good for three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course requirements. Each student must meet a minimum course requirement of five courses, or their equivalent in half courses. The program must be approved by the major department. One of the courses may be a research course devoted to the preparation of the thesis.

Thesis. The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it, approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the Commencement at which the degree is to be conferred. A second copy of the thesis, with a copy of the précis must be delivered to the major department. The précis must not exceed seventy-five words in length. The title page, précis, and academic history forms are obtainable from the Registrar. The ribbon copy

of the thesis must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The thesis is deposited by the Registrar in the University Library. The *précis* is printed by the University in an annual publication.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department, and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

THE DEGREE OF MASTER OF ARTS IN EDUCATION

The residence, candidacy, course, and examination requirements are basically the same as those listed above for the Master of Arts.

Thesis. Students may choose one of the following options, subject to the approval of the Department of Education:

- (1) Prepare a thesis or special report, as required for the M. A.
- (2) Elect two additional semester courses in subject matter fields.
- (3) Elect a two-semester, or double, seminar in which papers are prepared and presented to fellow students and staff.

For further particulars, see the announcement of the Department of Education.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation, and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence. The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence, broadly defined as graduate work done at Clark University under the immediate supervision of at least one member of the University faculty.

If the M. A. has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the Ph.D. degree, four courses, or the equivalent in half-courses, is normally a full-time program.

Requirements in foreign languages. A prospective candidate for the doctor's degree is advised to prepare himself early for the examinations in the reading of modern foreign languages. Usually the

student must pass two language examinations. French and German are normally required; but the Graduate Board may authorize the substitution of another language for one of these, and a student's major department may require additional languages.

A department, under special circumstances and with the approval of the Graduate Board, may permit a student to substitute the following for the usual language requirements: (1) The passing of an examination in either French or German and, in addition, certification by the department that the candidate has demonstrated a working knowledge of the language in the departmental program; (2) The satisfactory completion of an additional program of studies in a field related to the major program.

The language examinations are conducted by a committee composed of representatives of the modern language departments and a representative of the student's major department. The results of the language examinations are reported to the Registrar by the language committee; the results of the substitute requirements are reported by the department. A student must fulfill the above requirements before he will be permitted to take the preliminary examination for the degree of Doctor of Philosophy.

Foreign students whose native tongue is not English may petition the Graduate Board, subject to the approval of the department concerned, to omit either French or German if both languages are not necessary for the field of concentration.

Candidacy. Applications for admission to candidacy must be filed not later than November first in any academic year by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has:

1. Completed two full academic years of graduate work (or its equivalent in part-time work), one of which must be at Clark University;
2. Passed the required examinations in foreign languages, or completed satisfactorily the substitute program;
3. Passed a preliminary examination in his chosen fields of study;
4. Obtained the written endorsement of his major department;
5. Paid the diploma fee (\$25) and publication fee (\$30).

Candidacy for the degree of Doctor of Philosophy holds good for three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation. A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate.

The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a *précis*, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before Commencement Day at which the degree is to be conferred the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the *précis*, each in a form prescribed, must be delivered to the Registrar of the University. At the same time a second copy of the dissertation and of the abstract may be required by the major department. The title page, *précis*, and academic history forms are obtainable from the Registrar. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Incorporated, of Ann Arbor, Michigan, and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*, which is widely distributed both in this country and abroad to subscribing libraries and leading abstracting services. The *précis* is printed in an annual publication by the University.

Final examination. The final examination is an oral and lasts for at least two hours; additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, including the chairman and one other member of the

major department, a member of the Graduate Board under whom the candidate has done no work (unless such a member has participated in the preliminary examination of the candidate), and such other members of the Graduate Board as may be duly appointed. The president of the University is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS, AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Both outright grants and loans for educational purposes are provided in many sections of the United States by local foundations, fraternal organizations, civic groups, etc.

Graduate scholarships and fellowships are available for prospective candidates for all Master of Arts and Doctor of Philosophy degrees. Appointments are made on the basis of scholarly promise and seniority and on the recommendation of the departments. The number of appointments available in any department varies from year to year. Fellows and scholars are expected to coöperate with the staffs of the various departments, and may by mutual agreement undertake limited responsibilities. They are never called upon to perform services which would interfere with the completion of a full-time program of graduate study.

In a case where assistance in the department, either in research or teaching, is to be a duty of the fellow, an appointment may be designated as a research fellowship or a teaching assistantship. An appointment of this nature is made on the recommendation of the department and with the consent of the applicant.

Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Late applica-

tions are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Board for final action.

According to an agreement between the members of the Association of American Universities, elections of fellows and scholars will be communicated on April first, but not before, to each successful candidate.

Stipends for graduate fellowships and scholarships are provided by the following funds:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the Board of Trustees.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the Board from 1919 to 1937.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester. The income of this fund is for the benefit of native born citizens of the City of Worcester.

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy, is for the benefit of students who are studying for that degree.

THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly is to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

Teaching assistantships are available in certain departments. These involve a specified amount of instruction with stipends which vary according to the amount of service agreed upon.

Assistantships are available in several departments. These positions involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Inquiries concerning any of the above types of appointment should be addressed to the chairman of the department concerned.

AID FOR GRADUATE STUDENTS

Student aid is available from the following funds, with the restrictions noted.

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

THE ELIZA D. DODGE FUND. The income of this fund is granted to graduate students of limited means who are engaged in research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

LOANS FOR GRADUATE STUDENTS

Loans are available for graduate students from the funds listed below. These loans bear interest at 3% per year.

Applications for loans should be made at the office of the Bursar.

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND was established in 1926 for the benefit of students in the Graduate School.

THE SARAH M. THURBER LOAN FUND was established by the late Dr. Charles H. Thurber, former president of the Board of Trustees as a memorial to his mother.

NATIONAL DEFENSE STUDENT LOANS

These loans are available to students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics, or a modern foreign language. Applications for loans should be made at the office of the Bursar.

The Graduate School of Geography

SAMUEL VAN VALKENBURG, PH.D., Professor; Director of Graduate School of Geography

RAYMOND E. MURPHY, PH.D., Professor; Editor of *Economic Geography*

RICHARD J. LOUGEE, PH.D., Professor of Geomorphology

HENRY J. WARMAN, PH.D., Professor; Secretary of Graduate School of Geography

GUY H. BURNHAM, A.M., Instructor; Cartographer

ERWIN RAISZ, PH.D., Visiting Professor; Cartographic Techniques

HANS CAROL, PH.D., University of Zürich, Visiting Professor

JACK R. VILLMOW, PH.D., Ohio State University, Visiting Lecturer on U.S.S.R.

SPECIAL LECTURERS, 1958-59

HANS BOESCH, PH.D., University of Zurich

PRESTON E. JAMES, PH.D., Syracuse University

H. C. DARBY, PH.D., London University

RICHARD HARTSHORNE, PH.D., University of Wisconsin

GRADUATE WORK IN THE SCHOOL OF GEOGRAPHY

The Graduate School of Geography offers qualified students advanced training in geography. The map collection, libraries, and special laboratories for cartography provide unusual facilities for research work in residence. All graduate students are encouraged to undertake independent field studies as part of their university work.

The staff specialists must spend part of their time in travel and

field studies. While in residence, they offer regular courses of instruction and direct advanced research work. Special lecturers, both American and foreign, supplement the regular Staff.

Please read the preceding section, "The Graduate School," for general requirements. For course offerings see the Geography section of "Departments and Courses."

The degree of Master of Arts

Candidates will pass written examinations in at least six of the following fields: physiography, climatology, soils, biogeography, land utilization, economic geography, human and cultural geography, regional geography, political geography, and urban geography. Oral examinations for the master's degree cover four fields approved by the Staff. The master's degree requires two years except for those whose preparation in fundamentals has been adequate to enable them to qualify in less time.

The degree of Doctor of Philosophy

Candidates are required to submit superior written examinations, and to pass a general oral examination covering six fields approved by the Staff. The oral examination is scheduled after language requirements are fulfilled. In general, a year of work beyond the master's degree should prepare candidates for the general examination preliminary to acceptance as candidates for the doctor's degree and to work on dissertations.

Theses and Dissertations

The master's thesis must be submitted to the major professor at least three weeks before it is to be deposited with the Registrar. Theses must rotate among and receive final approval of all staff members. Doctoral dissertations must be submitted at least four weeks before the completed copies are due at the office of the Registrar. Dissertations must be circulated first and then defended. Candidates submit the next-to-final drafts for staff circulation.

All dissertations are now reproduced in full on microfilm. Since maps and other graphic devices in color will not reproduce satisfactorily, it is recommended strongly that such features be done in black and white for the master copies of dissertations.

DISTINCTIVE FEATURES

In addition to location in a natural setting rich in physical attributes worthy of investigation, the Clark University Graduate School of Geography is within easy access of such research centers as Harvard and Yale Universities, Boston cultural centers, and the American Geographical Society in New York.

The Clark Graduate School has become a traditional "port of call" for most professors of geography in this and other countries. Their stays may range from one hour to as long as six months or a year. Clark graduate students are privileged to visit with these leaders in the field of geography.

Graduate students are assigned desks and shelves in the Geography Workroom. Staff offices are located on the floor immediately above. Conferences are easily and frequently arranged. Both workroom and classroom have immediate connections with the periodical room and the open shelves of the library. The Libbey Library on the first floor serves for general conferences and seminars.

Each year the workroom group elects officers, who are responsible for the management of workroom activities. The officers also publish *The Monadnock*, which for thirty years has been circulated to the alumni of the Graduate School of Geography.

The professional magazine, *Economic Geography*, is edited by a staff member. Launched at Clark University over a quarter of a century ago, it is the only magazine published in English that specializes in the economic phases of geography.

An outstanding feature of the Graduate School of Geography is the field camp of three weeks' duration at the beginning of the fall term. Resident prospective candidates for graduate degrees in geography attend the field camp. The program includes studies in physiography, land utilization, urban geography and weather, with special training in mapping and other field techniques. Following return to campus, about ten days are allowed for the completion of field reports. Formal course work begins on the second Monday after the close of the field camp.

Formal course work in geography ends about May 1st, giving students free time in which to read and coordinate their work prior to the examination period.

SPECIALIZATION

There are certain basic courses that everyone takes, particularly in the master's program. However, the increasing complexity of world problems makes it impossible for anyone to become proficient in all phases of geography. In recognition of this, candidates for the doctor's degree are encouraged to specialize. The specialty depends upon the interests of the student.

STUDENTS' FEES

All geography students in residence pay, in addition to the general university fees, a camp fee, a workroom fee, and a classroom materials fee.

The camp fee, determined on a cost basis, varies between \$50 and \$80. It is payable to the camp director on or before the first day of camp. It covers, in addition to camp tuition, board and lodging, transportation, maps, drafting supplies, and the use of meteorological instruments and other equipment.

The workroom fee, \$5 a semester, is payable to the department November first and March first. It helps to maintain the geography workroom and equipment used by graduate students—alcove desks, files of maps, card catalogue, adding machine, darkroom facilities, drafting tables and instruments.

The classroom fee, \$5 a semester, is payable to the department November first and March first. It is for mimeographing and for the maintenance, in part, of the classroom wall maps and other equipment.

THE SUMMER SCHOOL

The Summer School

ROGER C. VAN TASSEL, *Director*

The Clark University Summer School offers a unique opportunity for summer college study in Central Massachusetts. Intensive instruction in numerous fields is offered in the intimate and pleasant atmosphere of a small university.

During 1959 the three-week Intersession met from June 8 to 27 and the regular summer session from June 29 to August 14. A preliminary announcement of the 1960 Summer School program should be available about February 1, while the Summer School issue of the CLARK UNIVERSITY BULLETIN is published shortly thereafter.

The Summer School was revised in 1955 to offer a larger variety of courses to undergraduates, graduate students and teachers, and to permit students to obtain a larger number of academic credits. The Intersession, a three-week period of concentrated study, and the Summer Session permit the student to take three semester courses (9 semester hours of credit). Evening courses are scheduled permitting students to continue their education during the summer while engaged in day-time employment.

To broaden his intellectual horizons the student is also encouraged to engage in informal afternoon seminars, special evening lectures, conferences, to take week-end excursions to famous New England cultural centers and to participate in the various social events.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward baccalaureate degrees, unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the chairman of the department concerned.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages and occasionally other subjects, which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration.

COURSES OFFERED

The following courses were offered in 1959 and are listed here as a typical example of the programs of study available at the Intersession and Summer Session:

BIOLOGY

- S. 11a General Biology—The Plant Kingdom
- S. 17 General Ecology
- S. 130 An Introduction to Microbiology
- S. 262 Instrumental Procedures in Biological Investigations
- S. 370 Research in Biology

BUSINESS ADMINISTRATION

- S. 16 *Business Statistics
- S. 17 Public Speaking
- S. 150a Principles of Marketing
- S. 184 Management-Labor Relations
- S. 255b Marketing Policies

ECONOMICS

- S. 13 Money and Banking
- S. 140b Consumer Economics
- S. 28 Research in Economic Problems

EDUCATION

- S. 201b Educational Psychology
- S. 209a Teaching of Social Studies
- S. 225 A Demonstration in Methods and Materials in Teaching
- S. 229 Group Evaluation and Guidance
- S. 290b Philosophy of Education

ENGLISH

- S. 11a English Composition and Literature
- S. 11b English Composition and Literature
- S. 12 Public Speaking
- S. 106 Contemporary American Fiction
- S. 125 The Short Story
- S. 142b The English Novel through Hardy

FINE ARTS

- S. 12 Introduction to Music
- S. 195 Introduction to Contemporary Art

* Double course

GEOGRAPHY

- S. 191 Cartography
- S. 28a Physical Geography of
New England
- S. 291 Cartography
- S. 300 Research in Geography

HISTORY AND GOVERNMENT

- S. 130a Political History of the
United States
- S. 221a England in the Twentieth
Century
- S. 230b Social and Intellectual
History of the United
States
- S. 236 The American Revolution,
1763-1789
- S. 251a American Political Parties
- S. 255 The Constitution and Civil
Liberties
- S. 300 Reading and Research in
History and Govern-
ment

LANGUAGES

- S. 10 Elementary French Re-
fresher
- S. 12 *Intermediate French
- S. 14 *Readings in French
Literature
- S. 11 *Introductory German
- S. 12 *Intermediate German
- S. 11 *Introductory Spanish

* Double course

MATHEMATICS (NSF Institute)

- S. 201 *Fundamental Concepts of
Mathematics
- S. 221a Modern Algebra
- S. 221b Foundations of Geometry

PHILOSOPHY

- S. 15a Introduction to Philosophy
of Religion
- S. 119 Basic Issues in Philosophy
- S. 290b Philosophy of Education

PSYCHOLOGY

- S. 11a General Psychology
- S. 103b The Abnormal Personality
- S. 150a Introduction to Child
Psychology
- S. 172a Personality Development
- S. 350 Research in Psychology

SOCIOLOGY

- S. 11a Principles of Sociology
- S. 12a Introduction to cultural
Anthropology

THE EVENING COLLEGE

The Evening College

THOMAS J. DOLPHIN, *Director*

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, The Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the Bachelor of Science degree in either General Studies or Business Administration. The Evening College also offers the Diploma in General Studies, a short formal program in liberal education designed specifically for adults.

Finally, as a community service, The Evening College organizes frequent non-credit short courses, institutes and seminars tailored to the specific needs of various civic, professional and business groups. Information regarding such services should be addressed to the Director.

ADMISSION TO INDIVIDUAL COURSES

In general, admission to individual courses in The Evening College is open to all interested adults seeking to further their education. High school graduation, though not required, is desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

DETAILED INFORMATION

Detailed information about The Evening College is contained in the special catalogue available from the Director, The Evening College, Clark University, Worcester 10, Mass. Catalogues are issued in advance of registration for the Fall and Spring semesters.

ADMISSION TO FORMAL PROGRAMS OF STUDY

Adults applying for a formal program of study in The Evening College for the first time after September, 1957, will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded directly to The Evening College on forms which will be supplied upon request by the College. Adults who have attended other colleges should request that official transcripts be forwarded directly to The Evening College of Clark University, 950 Main Street, Worcester 10, Massachusetts.

DEPARTMENTS AND COURSES

Interdepartmental Majors

General Education

Biology

Business Administration

Chemistry

Classics

Economics and Sociology

Education

English

Fine Arts and Music

Freshman Orientation

Geography

Geology

German

History, Government, and International
Relations

Mathematics

Philosophy

Physics

Psychology

Romance Languages





DEPARTMENTS AND COURSES

Departments and important subdivisions of departments and certain interdepartmental groups of courses are listed in the following pages. Interdepartmental Majors and General Education are listed first. Departments follow the first two entries in alphabetical order. Departmental announcements contain important general information, as well as regulations concerning graduate work and statements of the requirements for undergraduate majors.

The announced courses of instruction are subject to any modification which may become necessary.

COURSE NUMBERING SYSTEM

A number, unmodified by "a" or "b," represents a year course continuing through the two semesters of an academic year. A number followed by an "a" means: half course, first semester; a number followed by a "b" means: half course, second semester.

A two-semester course is divisible unless an explicit statement of indivisibility appears in the course description. Those courses noted as "indivisible" require the successful completion of the first semester as a prerequisite to entering the second semester, and no credit is granted unless both semesters are satisfactorily completed.

Courses are, in general, arranged in sequence so as to progress from the elementary to the advanced. In those departments which offer work at the graduate level, courses are classified under three headings as follows:

PRIMARYLY FOR UNDERGRADUATES, designated by numbers beginning with the figure "1."

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS, designated by numbers beginning with the figure "2." Open to juniors and seniors with the consent of the instructor.

PRIMARYLY FOR GRADUATE STUDENTS, designated by numbers beginning with the figure "3."

In the departments offering only undergraduate work, course numbers begin with the figure "1." Business Administration, an exception to the rule, has some course numbers beginning with the figure "2."

Interdepartmental Majors

The faculty has authorized "interdepartmental majors" in order to provide a broader study of certain fields than can be fitted into any departmental program, while yet preserving the unity of subject essential to a major.

An interdepartmental major includes eight or more required courses.

At present two programs are offered under this plan. These are:

I. INTERNATIONAL RELATIONS

Freshman and Sophomore Years

General Educ. 14
Economics 11
Geography 10
Government 14

Europe and the United States since 1500
Principles of Economics
Principles of Geography
International Relations

Junior and Senior Years

Government 240
Government 241
Geography 201
Economics 207
Economics

Seminar in International Relations
International Law and Organization
Political Geography
International Economics
One-half course to be selected

Instructor in charge: Mr. Hayden

II. AMERICAN CIVILIZATION

Freshman Year

General Educ. 14

Europe and the United States since 1500

Sophomore Year

At least two of the following courses:

Government 15
Economics 11
Sociology 11

Introduction to Government
Principles of Economics
Principles of Sociology

Junior and Senior Years

History 230	Social and Intellectual History of the United States
English 111	A Survey of American Literature
History 23b	Senior Conference in American Civilization

Two courses chosen from the following list:

Government 251a	American Political Parties
Government 254b	American Constitutional Law
History 234a	American Diplomatic History
History 235a	The United States in the Twentieth Century
History 236a	American Political History 1828-1877
Philosophy 12	History of Philosophy
Philosophy 18b	History of American Philosophy
Sociology 15a	Social Institutions
Sociology 29b	Advanced Sociological Theory

Alternative courses may be chosen with the approval of the instructor in charge of the program.

Instructor in charge: Mr. Grob.

General Education

Courses in General Education are distinguished from courses which are listed in departmental announcements by point of view and breadth of approach rather than by content. They offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of culture where he has no expectation of attaining professional competence. General Education courses are thus a valuable supplement to the major program. They are outside the sequence of courses in a student's "major" or "field of special interest" and are generally without specific prerequisites.

The following courses are classified for administrative purposes in Group A or Group B or Group C. They may be used to meet college requirements wherever a particular Group is specified in the "Freshman Programs" or in the "Requirements for a Bachelor's Degree."

Courses in General Education

10. An Introduction to Physical Science.

This course covers fundamental and outstanding developments of both classical and modern physics and includes selected topics from chemistry and astronomy. The methods and procedures of science as exemplified by physics are emphasized, and considerable attention is given to historical background and the effect of science on man's thought and life. The laboratory periods are devoted to demonstration, discussion, criticism and evaluation, and to a series of selected experiments which are carried out by the students. No attempt is made to develop special competence in laboratory techniques. Open to freshmen. Primarily for non-science major. Classified as a Group A course. May not be counted for credit with Physics 11.

MR. ROOPE

14. Europe and the United States Since 1500.

Political, economic and intellectual trends since the Renaissance. The first semester treats the sixteenth, seventeenth, and eighteenth centuries; the second semester, the nineteenth and twentieth centuries.

A class fee of one dollar for each member of the class is charged for supplies and duplicate library copies of books. Open to freshmen. Classified as a Group B course. First semester: MR. LEE assisted by MR. KUNIHOLM; Second semester: MR. LEE and MR. GROB assisted by MR. KUNIHOLM.

17. Major British Writers.

Unlike the conventional survey course which tries to present a comprehensive view of English literature from *Beowulf* to the present, this course focuses the attention on six or seven major writers in each semester. The emphasis is placed, not on tracing literary movements or on studying literary problems *per se*, but on showing what these great figures have to say that is of interest or importance to the general reader today. The course seeks to determine the attitude toward life of each author, to see what gave rise to that attitude, and to evaluate it and compare it with the views of other writers treated in the course. Chronology as well as other purely factual material is kept to a minimum.

Meets requirement for a third semester of English in addi-

tion to English 11. Open to sophomores, juniors, and seniors. Classified as a Group C Course. MR. ANDERSON

18. Literature and the Nature of Man.

The course is planned not only to introduce the student to viding him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products.

The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society, but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative.

The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation.

Meets the requirement for a third semester of English in addition to English 11, but not the requirement in Fine Arts. Classified as a Group C course. Open to sophomores, juniors, and seniors with the consent of the instructors. Successful completion of first semester is normally required for admission to second semester. MR. ANDERSON AND MR. KING

110. Fundamental Concepts of Mathematics. [Not offered 1959-60]

The subject matter of this course is exposed in terms comprehensible to students with no formal training in mathematics at the college level. It is hoped that the course will show the student how the abstract and general ideas of mathematics have implications for other fields of learning. Indivisible course. Open to juniors and seniors only. Classified as a Group A course.

115. Man and Language.

An introduction to the analysis of the nature and function of human language: its role in the life of individuals and societies. What is language? What is the relation between

language and thought? Does our language partially determine how we perceive the world? Why do languages change, and how? Is communication the primary function of language? How does language bind social groups together? How are the world's languages related to each other? Why don't we have a world language?

The course is designed (1) for the general student who wishes to know more about the nature of the uniquely and universally human institution of language; (2) for the student of such fields as psychology, sociology, anthropology and philosophy who wishes to explore the importance of language to his own field; and (3) for the student or teacher of English or foreign languages who is interested in the light which linguistic science can give upon the relations between his field and other areas of life and knowledge.

143. The Theater in Western Civilization. [Not offered 1959-60]

The Theater as an art form as it is developed by specific cultural periods of the civilization of the West. Open to upperclassmen with the consent of the instructor. This course does not meet the requirement of a third semester of English, nor the requirement in Fine Arts. Classified as a Group C course.

American Civilization

An "interdepartmental major" in the field of American Civilization is offered to candidates for the degree of Bachelor of Arts. The program required for the completion of this major is fully outlined under the heading *Interdepartmental Majors*.

Department of Biology

PROFESSOR EMERITUS POTTER, PROFESSOR NUNNEMACHER, ASSOCIATE
PROFESSOR (AFFILIATE) TRUANT, ASSOCIATE PROFESSOR (AFFILI-
ATE) ROSENKRANTZ, ASSISTANT PROFESSOR REYNOLDS, ASSISTANT
PROFESSOR CAMOUGIS, ASSISTANT PROFESSOR AHMADJIAN,
RESEARCH ASSOCIATE GATES

UNDERGRADUATE WORK

The department strives to aid the student in obtaining a broad yet thorough knowledge of the field of biology, to acquaint him with the major areas, methods, and tools of biological research and to encourage him to continue his own studies to the limit of his abilities. The best students are encouraged to undertake honors work including a senior course in which they are expected to carry out their own investigation of a special problem.

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department. An undergraduate majoring in biology must complete Biology 11, three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11, and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count towards the fulfillment of the major requirements.

Two typical programs of study are presented, but both are subject to considerable modification depending upon the individual student's interests. Choice of program should be governed by the ultimate professional goal of the individual student. Program A would meet the needs of a student preparing for a career in medicine or dentistry. Program B is recommended for the exceptional student who is particularly interested in modern biological research.

PROGRAM A

First Year

General Biology 11
 English 11
 Foreign Language
 Mathematics 11
 Division B

Second Year

Biology (2 semesters from 12a,
 14, 220b, 230a)
 Foreign Language
 Division B
 English (1 semester)
 Fine Arts (1 semester)
 Chemistry 11

Third Year

Biology (2 semesters)
 Chemistry 13
 Physics 11
 Foreign Language
 Elective

Fourth Year

Biology (2 semesters from 240a,
 242b, 249b, 231b)
 Electives (4 courses)

PROGRAM B

First Year

General Biology 11
 English 11
 Foreign Language
 Mathematics 11
 Chemistry 11

Third Year

Biology (2 semesters from 240a,
 242b, 249b)
 Foreign Language
 Mathematics 12
 Chemistry 17 & 170
 Fine Arts (1 semester)

Second Year

Biology (2 semesters from 12a,
 14, 220b, 230a)
 Foreign Language
 Division B
 Chemistry 13
 Physics 11

Fourth Year

Biology 260 (Special Problem)
 English (1 semester)
 Division B
 Biochemistry 218
 Electives (3 semesters)

GRADUATE WORK

Graduate instruction has been offered by the Biology Department since the founding of the University in 1887. At present a small number of students may work towards the Master of Arts Degree in specialized phases of botany, zoology, physiology and bacteriology. The department stresses a firm foundation in general biology and allied fields and the development of the critical judgment and work habits so necessary in teaching and independent research.

Admission as a candidate for an advanced degree in the department presupposes adequate preparation in the basic sciences, an

over-all undergraduate academic record of B or better and satisfactory standing in the graduate record examination. The program usually requires two full academic years and involves the completion of five full graduate courses and an acceptable thesis.

Graduate assistantships and scholarships are available in limited numbers.

Courses in Biology

During the academic year 1958-59, the following courses were given: * 11, 12, 14, 18a, 220a, 221b, 224a, 230, 231a, 240a, 241b, 249b, 320, 330, 340, 350, 360.

PRIMARILY FOR UNDERGRADUATES

11. General Biology.

The fundamental principles and problems of biology. One laboratory period per week. Divisible course upon approval by the department. Open to freshmen.

MR. AHMADJIAN AND MR. NUNNEMACHER

12a. Comparative Anatomy.

The morphology of the vertebrates from a comparative standpoint which traces the evolution of animals from fish to mammals. Two lectures and two laboratory periods per week, first semester.

MR. NUNNEMACHER

14. Botany.

First semester, morphology, and taxonomy of the lower plants. Special emphasis is given to the algae and fungi. Second semester, systematic botany of the higher plants with emphasis on our local flora. A collection of one hundred plants is required, also a spring program of laboratory work in the field of at least three days' duration. Either semester of the course may be elected separately. Prerequisite: Biology 11, first semester.

MR. AHMADJIAN

17b. General Ecology.

An introductory study of the distribution of plants and animals, their inter-relationships and adaptations to such a wide variety of environments as the seashore, sand dunes, wood-

* Courses 11a, 14, 18a were given by Mr. Potter in 1958-59.

lands, and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during the laboratory period or on Saturday. Three lectures, one laboratory per week. Usually offered in the summer.

MR. NUNNEMACHER

18a. Genetics.

[Not offered 1959-60]

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201. Advanced Systematic Botany.

[Not offered 1959-60]

215a. Invertebrate Zoology.

[Not offered 1959-60]

220a. Histology

A comprehensive course dealing with tissue structure. Emphasis is placed on the study of mammalian tissues. Two lectures and two laboratory periods per week.

MR. NUNNEMACHER

221b. Embryology.

A consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week.

MR. NUNNEMACHER

223b. Parasites and Parasitism.

A survey of parasitic forms from both the animal and plant kingdoms with emphasis on the role of parasitism as a specialized mode of life. Three lecture and three laboratory hours a week. Prerequisites: Biology 11 and the consent of the instructor.

MR. REYNOLDS

224b. Neuro-anatomy.

[Not offered 1959-60]

MR. NUNNEMACHER

230a. General Microbiology.

A presentation of the major problems, phenomena and relationships encountered in the study of bacteria, viruses, molds, yeast and protozoa. The laboratory sequence is designed to acquaint the student with basic bacteriological techniques. Two lecture and six laboratory hours a week. Prerequisites: Biology 11, Chemistry 11 and the consent of the instructor.

MR. REYNOLDS

231b. Bacterial Physiology.

Topics and exercises selected to demonstrate the chemical and physical principles underlying bacterial activities. Two lecture and six laboratory hours a week. Prerequisites: Biology 230a, Chemistry 13 (the second semester of Chemistry 13 may be taken concurrently) and the consent of the instructor. Biology 240a is strongly recommended. MR. REYNOLDS

240a. General Physiology.

An introduction to the physical and chemical phenomena underlying the functions which are common to living organisms. Prerequisites: Biology 11, Chemistry 11, Physics 11. Three lectures and one laboratory period per week.

MR. CAMOUGIS

241a. Endocrinology.

A study of the roles of various endocrine mechanisms in mediating physiological activities. Open to students who satisfy the instructor as to their preparation. Three lectures per week.

MR. CAMOUGIS

242b. Comparative Animal Physiology.

The more important physiological phenomena are treated comparatively throughout the animal kingdom. Prerequisites: Biology 240a or its equivalent. Two lectures and two laboratories per week.

MR. CAMOUGIS

249b. Neurophysiology.

[Not offered 1959-60]

The physiology of central and peripheral nervous systems, receptors, and muscles are considered in both vertebrates and invertebrates. Prerequisites: Biology 240a or its equivalent. Three lectures and one laboratory per week.

MR. CAMOUGIS

260. Special Problems.

Advanced semi-independent study of an approved topic under the direction of a member of the staff. Hours and credit to be arranged.

STAFF

S. 262. Instrumental Procedures in Biological Investigations.

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chroma-

tography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy will be carried out. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry, and radioactive tracers.

Offered in the summer.

MR. ROSENKRANTZ

PRIMARILY FOR GRADUATE STUDENTS

300. Readings and Research in Biology.

STAFF

350. Graduate Seminar.

STAFF

360. Thesis.

STAFF

Business Administration

PROFESSOR MELDER, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE
PROFESSOR NICHOLSON, ASSISTANT PROFESSOR BALKO, ASSISTANT
PROFESSOR SARACHEK, INSTRUCTOR MONIZ, LECTURER BREEN

The Division of Business Administration

GEORGE E. HARGEST, *Acting Director*

ADVISORY COMMITTEE

NATHAN T. BASCOM, President, Worcester Mechanics Savings Bank
JOHN W. COGHLIN, President, Coghlin Electric Company
EVERETT W. HICKS, Vice President, Norton Company
FREDERICK W. HOWE, President, Crompton and Knowles Loom
Works
H. LADD PLUMLEY, President, State Mutual Life Assurance Com-
pany of America
RICHARD C. STEELE, Associate Publisher, Worcester Telegram Pub-
lishing Company
PARKER TROWBRIDGE, Resident Manager, Paine, Webber, Jackson
and Curtis

GENERAL STATEMENT

The Division of Business Administration presents and supervises a four-year course of study leading to the degree of Bachelor of Science in Business Administration. The "core curriculum" is given cooperatively by the departments of Economics and Sociology, English, History, Government and International Relations, Mathematics, and the Natural and Physical Sciences.

General supervision of the program rests with the Administrative Committee representing the faculty. An advisory committee listed above assists in the formation of general policies.

A statement of the requirements for the degree of Bachelor of Science in Business Administration is found under the heading "Requirements for the Bachelor's Degree."

Students should note that the following Business Administration

courses may not be counted for credit toward the degree of Bachelor of Arts: 104a, 152b, 154b, 156b, 172a, 174b, 176a, 202, 204b, 206, 253b, 254a, 274b.

Requirements for admission and the freshman program are covered in the general sections "Admission Information" and "Student Programs."

Transfer Students. Transfer students desiring to enter with advanced standing should consult advanced standing section under Admission Information.

THE BUSINESS ADMINISTRATION PROGRAM

Business today seeks its young recruits among those who give promise of being able to qualify for places of responsibility in management. While business still demands those who have command of certain technical skills, its broader outlook dictates that they shall also have a sound cultural education as well as training in the basic fundamentals of business.

The program leading to the Bachelor of Science degree in Business Administration is designed to provide fundamental skills in business as well as broad professional training. Breadth is assured by prescribing required courses in the basic "tool" subjects and in selected functional areas of business activity. Professional and technical specialization is assured by requiring the student to select one of the areas for concentration. Overspecialization, however, is prevented by limiting the extent of this concentration. The opportunity for cultural enhancement is available to the student by allowing him freely to elect part of his program among courses in the Arts and Sciences.

THE AREA OF CONCENTRATION

At the beginning of his sophomore year, the student is required to elect the area of concentration in which he is to specialize. Below are listed course programs for each of the areas presently available. The student is required to present at least four and no more than five courses in the elected area of concentration before he may graduate. For this purpose, no more than two half-courses with a grade of less than C— are acceptable.

Accounting

BA	100	Principles of Accounting
BA	102	Intermediate Accounting
BA	104a	Federal Tax Accounting
BA	202	Cost Accounting
BA	204b	Auditing
BA	206	Advanced Accounting

Economics

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking
Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	22	Labor Economics
Economics	205a	Intermediate Economic Theory
Economics	207	International Economic Policy
BA	120a	Corporation Finance
BA	276a	Managerial Economics

Finance

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking
Economics	15a	Public Finance
Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	25b	Fiscal Policy
Economics	26	Industrial Organization and Government Control
BA	120a	Corporation Finance
BA	121b	Investments

Marketing

BA	150a	Principles of Marketing
BA	152b	Advertising
BA	154b	Retailing
BA	156b	Wholesaling
BA	252a	Marketing Research
BA	253b	Sales Forecasting
BA	254a	Sales Management
BA	255b	Marketing Policies
Ec	140b	Consumer Economics

Management

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	176a	Production Control
BA	272	Management Policies
BA	275a	Organization Theory
BA	276a	Managerial Economics
BA	290	Analysis of Business Problems

Personnel Administration

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	182b	Personnel Management
BA	184	Labor Relations
BA	275a	Organization Theory
BA	285b	Human Relations in Industry
Ec	22	Labor Economics

THE BACHELOR OF BUSINESS ADMINISTRATION DEGREE

The Bachelor of Business Administration degree will be granted in June 1959 and June 1960, and possibly to some students in June 1961. Thereafter, only the Bachelor of Science in Business Administration degree will be conferred.

The requirements for the degree of Bachelor of Business Administration are as follows:

Required courses:

BA 100, BA 120a, BA 140, BA 150a, BA 160, BA 172a, BA 290, Econ. 11, Econ. 13a, Mathematics 11, English 11, English 12a, Government 15.

In addition to the above required courses the student should present 5 additional courses in Business Administration or in closely related subjects.

Courses in Business Administration

During the academic year 1958-59 the following courses were given: 100, 102, 120a, 121b, 140, 150a, 154b, 160, 170b, 172a, 174b, 176a, 182a, 184, 206, 252a, 253b, 274b, 290.

ACCOUNTING

100. Principles of Accounting.

The organization and use of financial records, with emphasis on interpretation as well as on techniques of procedure. Required of all candidates for the degree of B.S. in B.A. Indivisible course.

MR. MONIZ

102. Intermediate Accounting.

Generally accepted accounting principles and procedures and their application to asset, liability and proprietorship accounts. The analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is placed upon problem analysis and solution. Prerequisite: B.A. 100. Indivisible course.

MR. HARGEST

104a. Federal Tax Accounting.

The legal and accounting fundamentals of federal income and social security taxes with major emphasis upon the preparation of returns. Prerequisite: B.A. 100.

202. Cost Accounting.

Basic principles of cost accounting are related to job order, process, estimated and standard cost systems. Costs for profit determination and for managerial control and decision making are considered. Offered in alternate years. Prerequisite: B.A. 102 or the consent of instructor.

MR. HARGEST

204b. Auditing.

After an analysis of the purpose and scope of the several classes of audits, the course deals with (1) professional ethics (2) auditing standards (3) internal control systems (4) audit procedures applicable to asset, liability and proprietorship accounts (5) the use of worksheets and the preparation of statements and reports. Prerequisite: B.A. 102.

206. Advanced Accounting.

[Not offered 1959-60]

The theory and practice of accounting for branches, mergers, receiverships, estates and trusts, consolidated statements, budgets, municipal accounts, and other topics of an advanced nature. Offered in alternate years.

Prerequisite: B.A. 102.

MR. HARGEST

ECONOMICS AND FINANCE

See the announcement of the Department of Economics and Sociology for descriptions of Economics courses.

Economics 11. Principles of Economics.

Required for the degree of B.S. in B.A.

Economics 13a. Money and Banking.

Required for the degree of B.S. in B.A.

Economics 13b. Problems in Money and Banking.**Economics 15a. Public Finance.****Economics 140b. Consumer Economics.****Economics 21b. National Income Analysis.****Economics 22. Labor Economics and Labor Problems.****Economics 24b. History of Economic Doctrine.****Economics 25b. Problems in Public Finance.****Economics 26. Industrial Organization and Governmental Control.****Economics 29a. Economics of Transportation.****Economics 205a. Intermediate Economic Theory.****Economics 207. International Economics.****Economics 211b. Comparative Economic Systems.****Economics 231b. Economic History of the United States.****120a. Corporation Finance.**

The financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. Required of all candidates for the degree of B.S. in B.A.

MR. NICHOLSON

121b. Introduction to Investments.

Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions; relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment program and exchange operation. Prerequisite: B.A. 120a.

MR. NICHOLSON

LAW

140. Business Law.

The legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, property, sales, negotiable instru-

ments and agency. Required of all candidates for the degree of B.S. in B.A. Indivisible course. MR. BREEN

MANAGEMENT AND PERSONNEL ADMINISTRATION

170b. Principles of Management.

The principles disclosed through a study of planning, organizing, directing, assembling resources, and controlling which apply equally to all fields of administration. Required of all candidates for the degree of B.S. in B.A. MR. SARACHEK

172a. Industrial Management.

[Not offered 1959-60]

A survey of the techniques of the executive control of manufacturing operations with special reference to such fields as specialization of labor, expansion, control of factors of production, and internal organization.

176a. Production Control.

[Not offered 1959-60]

The inter-relationship of production control with other control techniques. Topics to be discussed include production, forecasting, development and analysis, budgeting, scheduling, quality control, and coordination. The case study method will be employed. Prerequisite: B.A. 170b. MR. LEVENSON

182b. Introduction to Personnel Management.

Emphasis is placed on integrating personnel management with the other areas of management. Representative topics studied include procuring, developing, maintaining and using an effective work force; communications; morale; and labor-management relations. Prerequisite: B.A. 170b.

MR. SARACHEK

184. Management-Labor Relations.

The subject matter of the course is management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment as regards problems of management in shop industrial situations and under the law of labor relations is provided. Discussion and case methods are employed. Prerequisite: Economics 11.

MR. MELDER

272. Management Policies.

[Not offered 1959-60]

Actual problems of representative business concerns based on specific case studies: administrative coordination, business research, business policies, development of master plans and

operating budgets, measurement of administrative effectiveness. Prerequisite: B.A. 172a. Indivisible course.

275a. Organization Theory.

Basic principles of organization will be considered. Reference will be made to promotion, formal and informal organization, departmentalization, line-staff relationships, decentralization and centralization, communication and the organization's bargaining relations with other organizations. Prerequisite: B.A. 170b. MR. SARACHEK

276a. Managerial Economics.

Economic concepts are analyzed and evaluated in terms of their applicability to the development of business policies. The criteria of usefulness are consistency of thought and measurability of the variables under consideration. Prerequisite: Economics 11. MR. BALKO

285b. Human Relations in Industry.

290. Analysis of Business Problems.

The course is designed to integrate the principles covered in more specialized courses in Business Administration in order to bring business as a whole and its economic problems into perspective. Required of all seniors in the Business Administration program. Indivisible course. MR. BALKO

MARKETING

150a. Principles of Marketing.

The efficiency, social implications, and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer. Required of all candidates for the degree of B.S. in B.A. MR. BALKO

152b. Advertising.

Advertising as a tool of marketing. Topics studied include the economic functions of advertising, advertising research, media selection, advertising organizations and testing. MR. BALKO

154b. Retailing Principles.

[Not offered 1959-60]

The retailer in our economy, the store and its organization, aspects of buying and selling, operating activities and personnel, and retail control. Offered in alternate years.

MR. BALKO

252a. Marketing Research.

[Not offered 1959-60]

Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution. Prerequisites: Economics 11 and B.A. 160, or equivalent. Offered in alternate years. MR. BALKO

253b. Sales Forecasting.

[Not offered 1959-60]

Application of statistical procedure to the problems of predicting market demand and sales of the individual firm. Prerequisites: Economics 11 and B.A. 160, or equivalent. Offered in alternate years. MR. BALKO

254a. Sales Management.

The organization and direction of the efforts of a sales force. This involves establishing a sales plan; placing the sales department in the company organization; formulating sales policies; organizing the sales department; recruiting, training, equipping, motivating and compensating salesmen; and measuring their performance. Prerequisites: B.A. 150a and B.A. 170b, or equivalent. MR. BALKO

255b. Marketing Policies.

An analysis of how such forces as competition, demand, cost, distribution structure, and legislation affect marketing decisions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion, and prices. Prerequisites: Economics 11 and B.A. 150a, or equivalent. MR. BALKO

STATISTICS

160. Business Statistics.

Statistical methods and techniques applied to data drawn from the business community. The course includes sampling, statistical inference, estimation and decision making; correlation—linear, multiple and curvilinear; analysis of time series and index numbers. Prerequisite: Mathematics 11. Required of all candidates for the degree of B.S. in B.A. Indivisible course. *Note:* Students ranking high in Mathematics 11 may, with the consent of the Director of Division, meet the requirement for B.A. 160 by taking Economics 29a, *Statistical Methods*. MR. HARGEST

Department of Chemistry

PROFESSOR EMERITUS BULLOCK, PROFESSOR MARTELL, PROFESSOR
KEGELES,* ASSOCIATE PROFESSOR SUGIHARA, ASSOCIATE PROFESSOR
NES, ASSISTANT PROFESSOR TRACHTENBERG, ASSISTANT PROFESSOR
LEIFER, PROFESSOR (AFFILIATE) DORFMAN, VISITING
LECTURER NAKAMOTO

Chemistry courses fall into two groups:

1. Those primarily for undergraduates. These provide a foundation for professional work in chemistry or medicine, and are suitable for students desiring some knowledge of the subject as part of their general education.
2. Those primarily for graduate students.

UNDERGRADUATE WORK

Students who intend to become professional chemists or to study for an advanced degree in chemistry should major in chemistry and take at least two years' work in physics.

They should normally conform closely to the schedule given below. However, an outstanding student may elect an accelerated program leading to advanced work in the junior and senior years.

This might consist of the substitution of Physics 11 for the Group B elective in the first year, with subsequent adjustment of the curriculum to fulfill the distribution requirements (see section on "Requirements for the Bachelor of Arts Degree"). Such a program would make it possible for the student to elect Chemistry 19 in junior year.

REPRESENTATIVE FOUR YEAR CURRICULUM IN CHEMISTRY

First Year

English 11
German 11 (or French 11)
Chemistry 11
Mathematics 11
Elective, Group B

Second Year

Chemistry 13
Physics 11
Mathematics 12
German 12 (or French 12)
Elective, Groups B, C, or D

* Absent on leave, 1959-60.

Third Year

Chemistry 17 and 170

German 13 (or French 14)

Two of the following:

Mathematics 13, Physics 15,
Physics 16, Physics 18, Physics
124, French 11 or German 11,
Geology, Biochemistry, Biology,
Groups B, C, or D

Fourth Year

Chemistry 19

Two full courses from the following list:

Chemistry 112b or 116, Chemis-
try 212b, Chemistry 215, Physics
15, Physics 17, Physics 22,
Physics 23, Biology, Mathematics,
French 12 or German 12
Electives, Group B, C, or D

Chemistry 19 is required of all chemistry majors and is essential for work in physiology. Mathematics through Mathematics 13 is recommended as preparation for Chemistry 19 and for graduate work in chemistry. The same amount of mathematics is strongly recommended for all who elect chemistry as a major, and for all who expect to become professional chemists.

For professional work in chemistry, at least one year of graduate study is highly desirable.

Students who consider the possibility of later graduate study in chemistry are advised to secure a reading knowledge of German and either French or Russian in order to anticipate the requirements for higher degrees in most graduate schools.

Students who intend to enter the field of secondary education should acquaint themselves with the requirements in "education" of state and local licensing boards and prepare to meet these requirements. This may necessitate the omission of certain elective courses scheduled for the third and fourth years.

In most colleges, premedical students major in chemistry. The premedical programs are outlined above in the announcement of the Department of Biology. The program of special advantage in preparation for the study of physiology in medical school includes Chemistry 19.

Attention is called to laboratory fees and breakage deposits listed under the general heading "The Undergraduate Colleges" and the special heading "Fees and Expenses."

GRADUATE PROGRAMS

The Department of Chemistry offers advanced courses in the fundamental fields of chemistry, supplemented by specialized

courses and research work in inorganic, organic, physical and nuclear chemistry, and biochemistry. The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides completion of certain required courses, candidates for advanced degrees must show facility in conducting a laboratory investigation and must demonstrate a command of the field of major research interest.

GRADUATE SCHOLARSHIPS, ASSISTANTSHIPS AND FELLOWSHIPS

Scholarships cover tuition, laboratory fees and supplies. Teaching assistantships are available which require not more than eight hours per week of the student's time, permitting full-time work in the degree program. Other assistance is available in the form of predoctoral fellowships sponsored by the University or by various research grants. Research fellowships under grants are arranged on an 11-month basis. Teaching assistants are usually awarded summer fellowships, enabling them to pursue their research work more actively than is possible during the regular school year.

Assistantships and fellowships are allotted individually on the basis of the student's record. For an 11-month fellowship program the range of stipends is \$1,800—\$2,100 in addition to remission of tuition (\$1,050) and laboratory fees. The department also offers several postdoctoral fellowships.

Sponsors of fellowships and research programs include Clark University, Research Corporation, National Institutes of Health, Atomic Energy Commission, National Science Foundation, Esso Research Foundation and others.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

Recognizing the increasing importance of steroids in many fields of biological research, the National Cancer Institute of the National Institutes of Health, United States Public Health Service, has established grants for specialized training at the Department of Chemistry, Clark University, Worcester, Massachusetts, in collaboration with the Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts.

Applications are invited for appointment as postdoctoral fellows (Ph.D., M.D., or their equivalents) for twelve months with a stipend of \$5,500. Appointees who successfully complete the program will be awarded a certificate.

Academic credit (Chemistry 390) can be arranged and fellows may be selected to remain for further work in biochemistry.

Application forms and further information can be obtained from and should be returned to the program director, Dr. William R. Nes.

RESEARCH

A research problem is undertaken by each graduate student shortly after enrollment. The department offers research work in inorganic, organic, physical, physical-organic and nuclear chemistry, and biochemistry, in the following fields of investigation:

Synthesis of amino acids and other metal-ion complexing agents.

Catalytic effects of metal chelate compounds.

Thermodynamic properties of metal chelate compounds in solution.

Dissociation constants of weak electrolytes from electromotive force measurements.

Infrared and ultraviolet absorption spectra of metal chelate compounds.

Optical methods for the study of inhomogeneous liquids.

Diffusion of electrolytes, amino acids and peptides in water.

Ultracentrifuge studies of proteins, synthetic high polymers and smaller molecules.

Chromatographic analysis of proteins and their macromolecular degradation products.

Mechanism of low-energy nuclear reactions, including fission.

Chemical effects of nuclear transformations.

Radiochemical applications to analytical chemistry.

Organic reaction mechanisms and organic syntheses.

Chemistry of small ring compounds.

Substitution reactions, bridged bicyclic systems, selenium dioxide oxidations.

Biosynthesis of steroids and related natural products.

Occurrence of natural products in relation to species differences and phylogenetics.

Mechanism of biochemical reactions.

RESEARCH AND TEACHING FACILITIES

Modern research facilities include:

High-pressure hydrogenation apparatus, double-beam infrared recording spectrophotometers, ultraviolet recording spectrophotometer, precision conductivity bridge, precision capacitance bridge for dielectric constants, recording polarograph, heavily shielded anticoincidence low-level Geiger counters, scintillation spectrometer with multi-channel pulse-height analyzer, interferometric Gouy diffusion apparatus, continuous recording Rayleigh interferometer, optical ultracentrifuge, chromatography equipment, as well as all of the necessary standard research equipment.

Much of this equipment was especially designed and assembled in this laboratory. The department has a student machine shop to handle small work. Excellent machine shop facilities in Worcester have produced large parts for equipment of original design.

RESIDENCE, COURSE AND LANGUAGE REQUIREMENTS

Entering students take a written placement examination based on undergraduate organic and physical chemistry. This examination is normally given during the week prior to registration. Performance on this examination does not affect the student's standing, but is used only to help plan his program of studies. Every student will normally take courses 320, 322, 336 and 337 during his residence. All graduate students participate in Chemistry 380 and participation in seminar, Chemistry 350, is required. Tuition is not charged for either of these non-credit courses. Additional required

courses will be selected for both the master's and doctor's program in accordance with the student's field of specialization.

For special requirements for the degrees of Master of Arts and Doctor of Philosophy, see the general announcement of the Graduate School, above.

Courses in Chemistry

During the academic year 1958-59 the following courses were given: 11, 13, 17, 19, 112b, 116a, 116b, 170, 212b, 215, 218a, 218b, 300, 320, 322, 340, 341, 350, 380, 390.

PRIMARILY FOR UNDERGRADUATES

11. General Chemistry.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three hours of laboratory work per week. Prerequisite for all other courses in chemistry. Divisible only by consent of instructor.

MR. MARTELL*

13. Organic Chemistry.

Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three hours of laboratory per week. Prerequisite: a grade of C— or better in Chemistry 11.

MR. TRACHTENBERG

17. Principles of Analytical Chemistry.

Theories and principles of chemistry underlying volumetric and gravimetric analysis as well as more advanced analytical methods. Three lectures per week. Must be taken concurrently with Chemistry 170. Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11.

MR. SUGIHARA

19. Physical Chemistry.

Principles of physical chemistry including gases, liquids, solutions, crystalline solids, chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance

* Course 11 given by Mr. Bullock, 1958-59.

and transference, electromotive force, reaction kinetics, colloids. Required for a major in chemistry. Three hours of lectures and three hours of laboratory per week. Prerequisites: Chemistry 17, 170. Mathematics 13 is strongly recommended.

MR. LEIFER*

112b. Physico-Chemical Methods. [Not offered 1959-60]

An advanced laboratory course in physical chemistry. Registration limited. Open to students who have taken or are taking Chemistry 19. One lecture and six hours of laboratory work per week.

MR. KEGELES

116a. Organic Qualitative Analysis.

Prerequisite: Chemistry 13. One lecture and six hours of laboratory work per week.

MR. MARTELL†

116b. Advanced Organic Synthesis.

Prerequisite: Chemistry 13. One lecture and six hours of laboratory work per week.

MR. MARTELL†

170. Analytical Chemistry Laboratory.

Must be taken concurrently with Chemistry 17. Volumetric and gravimetric analysis and an introduction to instrumental and other advanced analytical methods. Two three-hour laboratory periods per week. Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11. Half course.

MR. SUGIHARA

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

212b. History of Chemistry. [Not offered 1959-60]

Outline of historical development of the science, and the relation of chemistry to other sciences at various periods of development. Lectures, collateral reading, reports and thesis. Open to graduate students and seniors who take or have taken Chemistry 13 and 19 or equivalent courses.

MR. BULLOCK

215. Honors Course.

Primarily for candidates for "honors in chemistry." A laboratory research project.

STAFF

* Course 19 given by Mr. Kegeles, 1958-59.

† Courses 116a and 116b given by Mr. Bullock, 1958-59.

218a. Natural Products.

Separation, characterization, and proof of structure of biologically significant natural products. Methodology for the isolation and identification of these materials. 3 Lectures and 1 Laboratory. MR. NES

218b. Biochemistry.

Enzymatic reactions, biosynthesis, metabolism and energetics of biochemical reactions. Hormonal and other control of physiologic processes, vitamins, transport. 3 Lectures and 1 Laboratory. Prerequisites: Chemistry 218a. MR. NES

GRADUATE COURSES IN CHEMISTRY

The courses 300, 350 and 380 are given through the year. All others are semester courses.

300. Research.

STAFF

312. Inorganic Chemistry.

Correlation of physical and chemical properties with atomic structure and periodic classification. Descriptive chemistry of the elements, including the lanthanides and actinides. First semester. MR. MARTELL

313. Special Topics in Coordination Chemistry.

Second semester.

MR. MARTELL

320. Advanced Physical Chemistry.

[Not offered 1959-60]

Selected topics in physical chemistry described in detail. Chromatography, kinetic theory, electro-chemistry, Debye-Hückel theory. Second semester. MR. KEGELES

321. Colloid Chemistry.

[Not offered 1959-60]

Osmotic and sedimentation equilibrium. Sedimentation velocity, diffusion. First semester. MR. KEGELES

322. Thermodynamics.

[Not offered 1959-60]

Applications of classical thermodynamics to chemical systems. Chemistry 322 and 320 are offered together in alternate years. First semester. MR. KEGELES

323. Statistical Mechanics.

[Not offered 1959-60]

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 322 and 340 or their equivalents. Second semester. MR. KEGELES

324. Refractometric Techniques. [Not offered 1959-60]

Applications of refractometric and interferometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography. First semester. MR. KEGELES

334, 335. Advanced Organic Synthesis. [Not offered 1959-60]

Lectures on synthesis of organic molecules emphasizing scope, limitations, mechanisms, and stereochemistry. Synthesis of carbon-to-carbon bonds, oxidation, reduction and conformational analysis. MR. TRACHTENBERG

336, 337. Physical Organic Chemistry.

Fundamentals of organic chemistry. Molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory.

MR. TRACHTENBERG

340. Quantum Chemistry I. [Not offered 1959-60]

Review of classical concepts and experiments from which quantum mechanics evolved. The old quantum theory, elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. First semester. MR. SUGIHARA

341. Quantum Chemistry II. [Not offered 1959-60]

Atomic and molecular structure. Interaction between atoms. Time-dependent processes. Prerequisite: Chemistry 340. Second semester. Chemistry 340 and 341 are offered together in alternate years. MR. SUGIHARA

342. Nuclear and Radiochemistry.

Fundamentals of nuclear science. Radiochemical techniques of production, isolation, identification and measurements of radioactive atoms. Applications to chemical problems. First semester. MR. SUGIHARA

345. Selected Topics in Advanced Nuclear and Radiochemistry.

Discussion of current research, chiefly for those doing research in nuclear chemistry. Prerequisite: Chemistry 342. Second semester. MR. SUGIHARA

346. **Molecular Spectra.**

Theory of ultraviolet, visible, infrared, and Raman spectra of polyatomic molecules. Application of spectra to the determination of molecular structure. Prerequisite: Chemistry 340.

MR. NAKAMOTO

350. **Seminar.**

Reports on research work and discussions of recently published work.

GUEST LECTURERS, STAFF AND GRADUATE STUDENTS

360. **Coordination Compounds.**

Chemical and physical properties of metal complexes, including theories of coordination, stereoisomerism, reaction mechanisms, solution stabilities, and the nature of the chelate effect. First semester.

MR. MARTELL

361. **Instrumental Methods.**

The principles involved in the determination of molecular structure from various physical properties, including electrode potentials, infrared and ultraviolet absorption spectra, magnetic properties, optical activity and refraction.

MR. MARTELL

380. **Research Conference.**

Informal reports of research work being done in the laboratory.

STAFF AND GRADUATE STUDENTS

390. **Steroid Biochemistry.**

A specialized course in the biochemistry of the steroids. For further description see statement above on Training Program for Steroid Biochemistry. Lectures and Laboratory.

MR. NES, STAFF, AND GUEST LECTURERS

Department of Classics

ASSOCIATE PROFESSOR BARLOW

The Department of Classics provides undergraduate courses for acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Advanced courses leading to a major in Classics are offered from time to time. Other courses, given entirely in English, deal with all phases of the Greek and Roman civilizations.

Since it is not possible to offer courses in elementary Greek and Latin every year, students who desire to elect them should consult the instructor as far in advance as possible.

Prize in Greek. The Ahepa Greek Prize of twenty-five dollars is awarded to the best student in *Elementary Greek*. Income for the prize is provided by the Worcester chapter, Order of Ahepa.

Courses in Classics

During the academic year 1957-58 the following courses were given: Greek 123a; Latin 11, 12, 13, 17a, 123b.

GREEK

11. Elementary Greek.

Greek grammar through forms, syntax, vocabulary, and reading; selections from Xenophon's *Anabasis*. Open to freshmen. Indivisible course.

MR. BARLOW

12. Attic Greek Prose; Homer's Iliad.

Prerequisite: Greek 11.

[Not offered 1959-60]

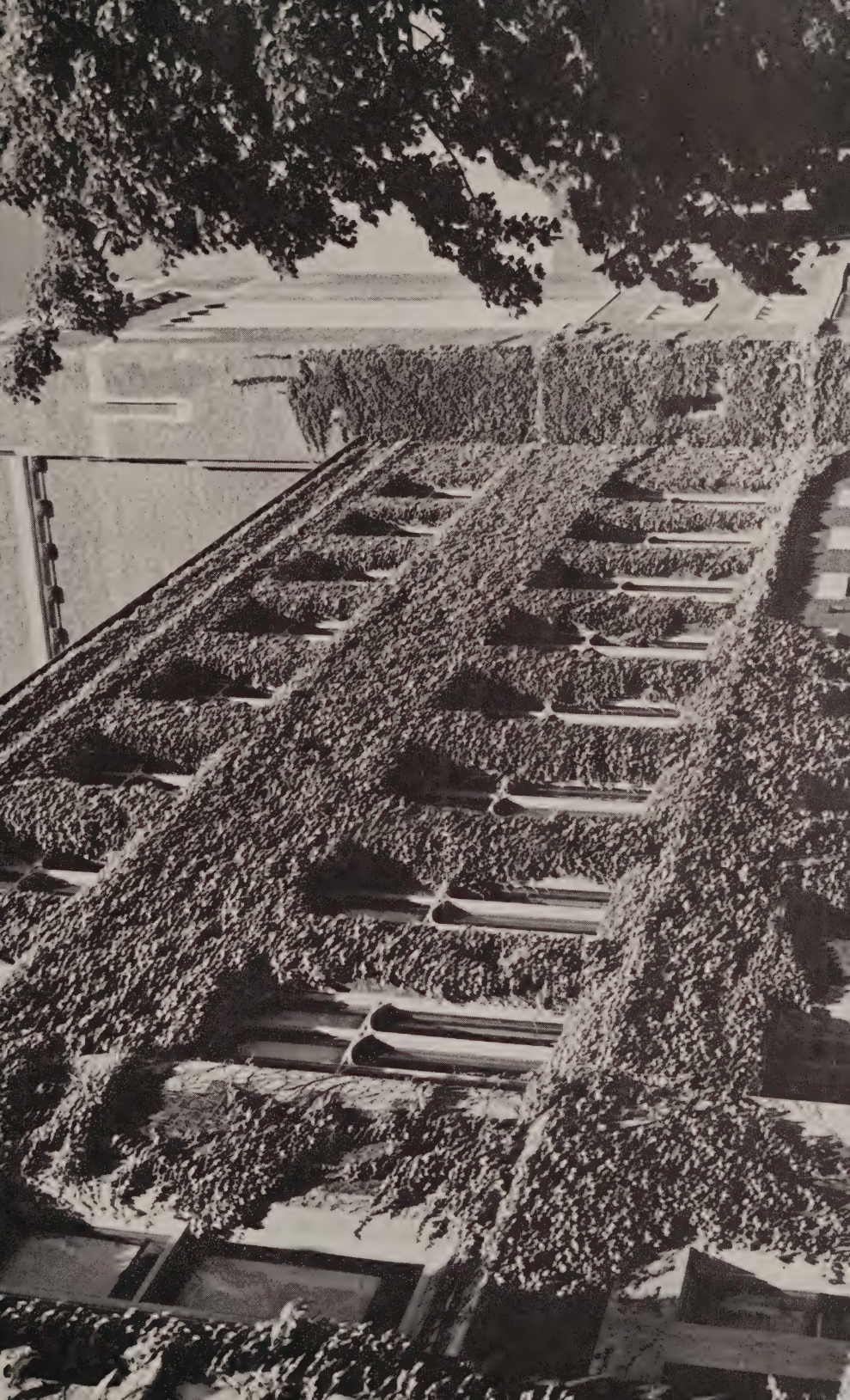
13. Greek Drama

Prerequisite: Greek 12 or equivalent.

[Not offered 1959-60]

123a. Greek Civilization.

Lectures, readings, and discussion on the history, literature, philosophy, art, religion, and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English. Open to freshmen.





Greek 123a may be counted with Latin 123b in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.

MR. BARLOW

LATIN

11. **Elementary Latin.** [Not offered 1959-60]
Introduction to the Latin language through forms, syntax, and vocabulary, with emphasis on the Latin element in English words. Selections from Latin prose. Open to freshmen. Indivisible course.
MR. BARLOW
12. **Cicero's Orations; Vergil's Aeneid**
Prerequisite: Latin 11 or two years of Latin. MR. BARLOW
13. **Catullus and Horace; Plautus and Terence.**
The course may begin with prose selections to rectify the lack of uniformity in preparation in secondary schools. Prerequisite: Latin 12 or at least three years of Latin.
MR. BARLOW
15. **Roman Historians; Poets of the Augustan Age.**
Prerequisite: Latin 13. MR. BARLOW
17. **Roman Philosophers; Roman Satire.** [Not offered 1959-60]
19. **Survey of Latin Literature.** [Not offered 1959-60]
- 123b. **Roman Civilization.**
Lectures, readings, and discussion on the history, literature, philosophy, art, religion, law, and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Given in English. Open to freshmen. Latin 123b may be counted with Greek 123a in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.
MR. BARLOW

Department of Economics and Sociology

PROFESSOR MAXWELL, PROFESSOR MELDER, ASSOCIATE PROFESSOR KILLIAN, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE PROFESSOR NICHOLSON, ASSOCIATE PROFESSOR VAN TASSEL, ASSISTANT PROFESSOR BALKO, ASSISTANT PROFESSOR SARACHEK, LECTURER BREEN, LECTURER ONORATO, INSTRUCTOR MONIZ

UNDERGRADUATE WORK

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 100, 102, 120a, 121b, 140, 150a, 160, 170b, 182a, 184).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program. In the second year, they should elect Economics 11 and Business Administration 100. In the third and fourth years, they should select courses in economics and in business administration in consultation with their advisers.

Economics 11 is a prerequisite to all other courses in economics. Similarly, Sociology 11 is a prerequisite to other courses in sociol-

ogy. Courses taken outside the department in partial fulfillment of the major requirement should be selected, subject to departmental approval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 205a, Intermediate Economic Theory.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternate years.

GRADUATE WORK

The program for the degree of Master of Arts is worked out individually with each student.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of economics should regard certain courses in business administration as part of the offerings of the Department of Economics and Sociology.

Courses in Economics

During the academic year 1958-59, the following courses were given: 11, 13a, 13b, 15a, 21b, 22, 25b, 26, 27g, 28, 29a, 200a, 200g, 205a, 207a, 207b, 280b, 39a, 311, 32, 322, 325, 34, 326, 327.

Descriptions of courses listed below under the designation "Business Administration" will be found in the announcement of "Courses in Business Administration."

PRIMARILY FOR UNDERGRADUATES

11. Principles of Economics.

Indivisible course.

MR. VAN TASSEL

Assisted by MR. MONIZ

Business Administration 100. Accounting.

Business Administration 102. Intermediate Accounting.

Business Administration 150a. Marketing.

Business Administration 182a. Personnel Management.

13a. Money and Banking.

MR. MAXWELL

13b. Problems in Money and Banking.

Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent.

MR. MAXWELL

140b. Consumer Economics.

Consumers' roles in a market economy and their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private non-commercial agencies, the government, and the cooperative movement.

MR. MELDER

15a. Public Finance.

The principles of governmental expenditures, revenues, and debts, with particular reference to the United States.

MR. MAXWELL

Business Administration 120a. Corporation Finance.

Business Administration 121b. Introduction to Investments.

- Business Administration 140. Business Law.
Business Administration 160. Business Statistics.
Business Administration 184. Labor Relations.

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

200a. Economic Growth.

Analysis of economic, cultural, social and political factors making for growth. Factors within underdeveloped countries which hinder economic development will be examined.

MR. MELDER

200b. Problems in Economic Growth.

The course examines some economic and social theories pertinent to economic growth. It then considers policy problems in two areas: acceleration of development rates in poorer countries and maintenance of growth in richer countries. Class members make studies of topics related to growth problems.

MR. MELDER

205a. Intermediate Economic Theory.

An analysis of contemporary price theory. MR. VAN TASSEL

207a. International Trade Theory.

Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium.

MR. VAN TASSEL

207b. International Economic Policy.

A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a.

MR. VAN TASSEL

21a. Business Cycles.

[Not offered 1959-60]

Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

21b. National Income Analysis.

A study of contemporary income theory. MR. VAN TASSEL

210a. Economic and Social Reform. [Not offered 1959-60]

The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy.

211b. Comparative Economic Systems. [Not offered 1959-60]

An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations.

Business 290. Analysis of Business Problems.**22a. Labor Economics.**

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems.

MR. MELDER

22b. Labor Economics.

Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance.

MR. MELDER

231. Economic History of the United States. [Not offered 1959-60]**24b. History of Economic Doctrine.**

After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists.

MR. MAXWELL

25b. Problems in Public Finance.

The theory underlying the so-called "full employment" act of 1946 is discussed, along with methods by which it may be implemented. Other questions examined are: reform of the federal, corporate income tax and death duties, incentive taxation, federal debt policy, the capital budget, federal budgetary procedure.

MR. MAXWELL

26. Industrial Organization and Governmental Control.

Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations.

Conducted on a seminar basis with student papers and reports often forming the basis for discussion. MR. NICHOLSON

27b. Introduction to Mathematical Economics.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Some attention will be given to special topics such as game theory and linear programming. Prerequisite: Mathematics 12—Calculus. Admission subject to approval of the instructor.

MR. NICHOLSON

28. Research in Selected Economic Problems.

STAFF

280b. Honors Seminar.

Designed to assist honors candidates in integration of the field. Prerequisite for honors.

STAFF

29a. Statistical Method.

The nature of statistics; statistical description; statistical inference; special topics. Special emphasis will be given to theoretical and observed frequency distributions, elements of probability theory, problems of sample design and interpretation, decision theory, time series, index numbers, and measures of association and correlation.

MR. NICHOLSON

Ordinarily required of all majors in Economics. With the approval of the Director of the Division of Business Administration, this *half course* may be substituted for B.A. 160, Business Statistics, by candidates for the degree of Bachelor of Science in Business Administration.

Business Administration 252. Marketing Research.

Business Administration 255b. Marketing Policies.

Business Administration 290. Analysis of Business Problems.

PRIMARYLY FOR GRADUATE STUDENTS

39a. Economic Theory.

Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes.

MR. MAXWELL

311. Seminar

STAFF

313. Reading	}	In Money and Banking	MR. MAXWELL
31. Thesis			
322. Reading	}	In Labor	MR. MELDER
32. Thesis			
324. Reading	}	In Marketing	MR. BALKO
33. Thesis			
325. Reading	}	In Public Finance and Fiscal Policy	MR. MAXWELL
34. Thesis			
326. Reading	}	In Business Organization and Government Control of Industry	MR. NICHOLSON
35. Thesis			
327. Reading	}	In International Economics	MR. VAN TASSEL
36. Thesis			
339. Reading	}	In Economic Theory	MR. MAXWELL
37. Thesis			

Sociology

UNDERGRADUATE WORK

An undergraduate whose primary interest is in sociology may meet the department requirement for a major by completing Economics 11 and three or four courses in sociology together with two or three approved courses in related departments. Related courses require departmental approval and must be discussed with advisers each registration day.

GRADUATE WORK

A range of courses sufficient for the needs of candidates for the master's degree only is offered. Individual work with instructors and small intimate seminars constitute a goodly part of the graduate student's program.

PREPARATION FOR LAW SCHOOL

A rigid program of pre-law core courses is discouraged by most law schools, by the American Bar Association, and by the Association of American Law Schools. Undergraduates heading for law schools are advised to seek a broad college education. The major field for the student undergraduate is not limited to a particular subject or a fixed group of studies. Some attention to the social sciences is generally favored, but is not mandatory.

Over the years many Clark students have been admitted to the best law schools in the country, often with very good scholarships. Within the last five years, for instance, two Clark men have captured a Root-Tilden scholarship, paying each man over \$7,000 toward expenses while attending New York University Law School.

There is an active student law club at Clark University. Distinguished lawyers, law professors and judges address the members and often talk to appropriate classes. Mr. Frederick W. Killian of the Department of Economics and Sociology, and also a lawyer, serves as adviser to those students planning to attend law schools. He is in close touch with legal education, and is readily available for consultation about law schools, scholarships, and undergraduate programs.

Courses in Sociology

During the academic year 1958-59, the following courses were given: 11a, 11b, 21a, 25b, 29a, 29b.

PRIMARILY FOR UNDERGRADUATES

11a. Introductory Sociology: Principles of Sociology.

The development of man; culture; culture and personality; social organization and structure; groups and group life; social relations; social norms; collective behavior; human ecology and population; socialization and social interaction; social disorganization and change; social institutions. Prerequisite for further work in sociology.

MR. KILLIAN

Assisted by MR. HOUSE

11b. Introductory Sociology: Sociological Analysis.

The application of sociological principles to the analysis of social situations, social problems and society. Prerequisite for further work in sociology.

MR. KILLIAN

Assisted by MR. HOUSE

- 12a. **Introduction to Cultural Anthropology.** [Not offered 1959-60]
The evolution and development of man and his culture; basic concepts; the races of man and their distribution; processes of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission, and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

15a. **Social Institutions.**

Institutional theory. History and development of major social institutions. Social control and social institutions. The basis of institutions in primitive experiences; belief systems of primitive peoples; family and kinship systems; institutional differentiation. Religious institutions and political institutions in the historical contexts of Hebrew, Greek, Roman and modern experiences. Person, self and institutions.

MR. KILLIAN

- 16a. **Social Problems and Their Analysis.** [Not offered 1959-60]
Contemporary social problems in the United States; the sociological means for their analysis.

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

- 21a. **The Family and Society.** [Not offered 1959-60]
The institutions of the family and of marriage as major systems of social control in Western society. Kinship among pre-literate peoples. The patriarchal family of the Hebrews; the Roman trustee family and its decline; the domestic family of Europe; the impact of modern conditions on the family. The family and institutional theory.

MR. KILLIAN

- 23b. **Crime, Delinquency and Society.** [Not offered 1959-60]
Criminal law and the impact of the study of criminology. Attempts to find "causes of crime." Patterns of criminal behavior. Social control of crime and delinquency. Modern methods of treatment and contemporary corrections.

MR. KILLIAN

25b. **Social Institutions: Legal Institutions.**

Law and the social order: development of Western legal institutions; the normative content and analysis of legal institu-

tions and law; relation to religious institutions; the legal tradition in Western society; law as a means of social control. *Law, science and policy*: law and its functions in modern times; the changing basis of legality; premises concerning man and his world in relation to law and its function. Sociology, anthropology and law. Selected readings in theory and analysis of case materials. MR. KILLIAN

27. Industrial Sociology. [Not offered 1959-60]

A study of industrial society with special emphasis on the relationships among persons as members of the many groups included in this society. The impact of social institutions on the character of the relationships studied. The formal and informal groups within the industrial form will be given attention as will the firm and community, viewed as interacting organizations.

29a. Social Theory and Introduction to Sociological Concepts.

The development of man's ideas about social life from Plato to Spencer. The general developments of sociology since Spencer. Required of Sociology majors. MR. KILLIAN

29b. Advanced Sociological Theory.

The writings of Sumner, Durkheim, Max Weber, Cooley, Mead, Becker, MacIver, and Parsons, as seen in the trend of sociological theory. The course is centered in the writing of a detailed term paper. MR. KILLIAN

28. Research in Selected Sociological Fields.

This course includes departmental honors and other individual projects by special permission of the department.

Department of Education

PROFESSOR JONES, ASSOCIATE PROFESSOR BORGER, ASSOCIATE PROFESSOR COFFEE, ASSISTANT PROFESSOR GIBBONS, ASSISTANT PROFESSOR NASH, LECTURERS SHEPHERD, WRAY, AND HARRIMAN

With the cooperation of PROFESSOR WARMAN of the Graduate School of Geography, ASSOCIATE PROFESSOR BECK of the Department of Philosophy, and MISS HUGHES, Dean of Women.

The Department has as its primary objective the providing of cultural and professional study for teachers and prospective teachers in elementary and secondary schools and academies. It offers introductory courses in Education for all students of junior standing or above who may be interested in teaching, and well integrated programs of training at both the elementary and high school levels.

UNDERGRADUATE WORK

The Department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their career at the College as convenient. The actual electing of courses in Education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the A.B. degree as possible, and lay a broad foundation of scholarship in the subjects in which they wish to teach.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the department offers its courses as electives, and not as a major in the College. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with three purposes in mind: (1) to provide introductory instruction to students who plan to teach in secondary schools and academies, and who, in preparation for such teaching, plan a fifth year of study leading to the degree of Master of Arts in Education;

(2) to provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools; (3) to offer certain introductory courses in Education to students who have not definitely decided upon teaching as a career but who desire some acquaintance with the problems of the field.

For students desiring to enter elementary school teaching immediately upon receiving the A.B. degree, a program has been evolved, in cooperation with the faculty of the College, whereby the election of up to 18 semester hours in Education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in Education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in Education in these last two years.

GRADUATE WORK

For students wishing to prepare for teaching in secondary schools and academies the department recommends high concentration in the undergraduate program upon the subject-matter fields in which they wish to teach, and suggests that they reserve for a fifth year most of the professional work in the theory and practice of teaching. A fifth-year program leading to the degree of Master of Arts in Education is offered by the department with majors available in elementary and secondary teaching aid. The program includes additional work in the student's subject-matter field, professional courses in Education, and supervised internship teaching in secondary schools. The master's degree is more and more being required of new appointees in high schools and is usually rewarded by a higher level of remuneration. To assist high ranking students who find the one year of full time graduate work difficult to finance, the department has a limited number of scholarships available to assist with tuition costs.

Requirements. The requirements for the degree of Master of Arts in Education cannot be adequately stated in terms of courses to be taken, because the evaluation of the work of each student will be made on the basis of achievement rather than on the basis of

courses completed. However, the minimum essentials in terms of course requirements are outlined below.

Course requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

- (a) Mathematics and natural sciences
- (b) History, geography, and economics
- (c) Ancient and modern foreign languages
- (d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in Education will normally be required. The program of courses to meet these requirements must be approved in advance by the department. Changes in the proportion of education and subject-matter courses may be made by the department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in Education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The department provides opportunities for internship teaching under supervision for all graduate students majoring in Education. For graduate students of the department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

- (a) Prepare an acceptable thesis or special report.
- (b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least four-semester courses in subject-matter area). This plan will apply primarily to

experienced teachers and particularly to those doing much of their study in the summer sessions.

(c) Elect, in lieu of thesis, a two-semester or double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Courses in Education

During the academic year 1958-59 the following courses were given: 20b, 200a, 200b, 201a, 201b, 203b, 207b, 208a, 209a, 210a, 214a, 214b, 215a, 260b, 263a, 290b, 311a, 311b, 312, 315a, 350, 380b.

PRIMARILY FOR UNDERGRADUATES

100a. Introduction to Education.

This course is designed to introduce the student to the historical, social, political, and economic forces that have educational trends and issues will be studied. Open only to juniors and seniors.

MR. GRIBBONS

FOR GRADUATE STUDENTS AND ADVANCED UNDERGRADUATES

201a. Educational Psychology: Child Growth and Development.

Principles basic to the understanding of children with special attention to emotional and social development and learning in the elementary school years.

MR. GRIBBONS

207b. Use of Audio-Visual Materials in Teaching.

Principles and practices in the use of visual and auditory materials and community resources in teaching. Extra work required for undergraduates. (A fee of \$8.00 for material.)

MR. BORGER

209a. Teaching of Social Studies.

[Not offered 1959-60]

Objectives, methods and materials used in the teaching of the social studies in the elementary and secondary schools. Extra work required of undergraduates.

MR. BORGER

210a. Educational Psychology, Advanced: Psychological Approach to Citizenship Development.

A study and evaluation of the theoretical formulations and experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Extra work required of undergraduates.

MR. JONES

215a. Internship Teaching in the Elementary School.

An extended period of observation and practice in teaching under supervision in regularly organized classes in the middle grades in public schools. Each student is assigned to a critic teacher, under whom he or she works for a minimum of two days per week for the first semester. The first two weeks of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and playground supervision are required of each student.

MR. JONES, MRS. HARRIMAN,
AND SUPERVISING TEACHERS

20b. (Geography 20b.) Geography in Education.

Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Extra work required of undergraduates.

MR. WARMAN

27b. Principles of School and Recreational Leadership.

The basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of instructor required for registration. Extra work required of undergraduates.

MISS HUGHES

263a. Methods and Materials in Teaching of Language Arts in the Elementary School.

Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Extra work required of undergraduates.

MR. SHEPHERD

260b. Curriculum Development in Elementary Education.

A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of co-operating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Extra work required of undergraduates.

MISS WRAY

290b. Philosophy of Education.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. Extra work required of undergraduates.

MR. BECK

PRIMARILY FOR GRADUATE STUDENTS**301b. Educational Psychology: Adolescent Growth and Development.**

Psychological principles as they bear upon learning and other problems of education with special reference to the growth and development of youth of secondary school age.

MR. JONES

303b. Curriculum Development in Secondary Education.

The historical background, basic issues, principles, and procedures of curriculum organization and development in secondary schools.

MR. GRIBBONS

308a. Methods and Materials in Secondary Education.

Methods and techniques used by the teacher in high school teaching, and a survey of materials available.

MR. BORGER

309a. Social Learning in Relation to Teaching and Counseling.

The purpose of this course is to consider concepts of learning which contribute to an understanding of the development of social behavior. Principles of learning and teaching from the fields of social psychology and sociology will be studied within the context of the social environment.

MR. COFFEE

210b. Citizenship Development: Seminar in Methods and Materials.

[Not offered 1958-59]

A study of procedures and programs in character and citizenship education in the schools. Attention will be given not only to curricular and co-curricular activities in the schools but also to the inter-relations between the school and other institutions and agencies in the community as they relate to the development of values and conduct in youth. MR. JONES

311a. Principles, Practices, and Organization of Guidance.

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course.

MR. COFFEE

311b. Guidance: Counseling.

Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case materials will be presented and analyzed.

MR. COFFEE

312. Guidance: Occupational Information and Placement.

The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service.

MR. COFFEE

313b. Personality Assessment in Guidance.

Lectures and demonstrations of techniques used to assess personality. Students will study critically a variety of evaluating methods and analyze the results.

MR. GRIBBONS

314a. Tests and Evaluation: Measurement of Ability and Achievement.

The methods and problems involved in the evaluation of abilities and accomplishments of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement.

MR. JONES

314b. Tests and Evaluation: Advanced Problems.

The measurement and evaluation of aptitudes, interests, attitudes, and personality with special attention to the problems of reliability of measurement and the possibilities of the use of such measures in teaching and counseling. MR. JONES

315a. Internship Teaching in the Secondary School.

An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.

MR. JONES, MR. GRIBBONS AND SUPERVISING TEACHERS

322b. Practicum in Guidance.

Supervised field work, reading, reports, and discussions.

MR. GRIBBONS

350. Research in Education.

Individual direction of students in their research projects.

STAFF

380b. Departmental Seminars on Current Problems.

STAFF AND GRADUATE STUDENTS

Department of English

ASSOCIATE PROFESSOR ANDERSON, ASSOCIATE PROFESSOR BEARD,
ASSOCIATE PROFESSOR CARTER,* ASSISTANT PROFESSOR LETENDRE,
INSTRUCTOR BORRNER, INSTRUCTOR CUNNINGHAM,†
VISITING INSTRUCTOR HABER

Freshmen must take both semesters of English 11.

General Education 17 (Major British Writers) is designed especially for non-English majors, and either half is recommended for students who wish to take a course in literature as a means of fulfilling the requirement of a third semester of English beyond English 11. English 13a, 111, and other courses (with the consent of the instructor) are also open to non-English majors; especially recommended is English 13a (Introduction to Poetry).

A major in English consists of a minimum of seven courses in addition to English 11, as follows:

1. English 13a. Normally this course should be taken in the sophomore year. *For English majors*, English 13a is prerequisite to any of the following courses: 101b, 104, 105, 107a, 110, 113, 117b, and 122a.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 107a, 110, 113, 117b, and 122b.
3. Three additional half-courses in English.
4. Three courses in allied fields: General Education 14; a year course in philosophy (preferably Philosophy 12); and one other course approved by the Department of English, preferably from the following list: Fine Arts 11, General Education 143, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, and Music 12.

An English major who has not been credited with two units of Latin or Greek for admission to the college must complete either a course in Latin or Greek or both of the following half-courses, given in English: Greek 123a and Latin 123b.

* Absent on leave, first semester 1959-60.

† Absent on leave 1959-60.

English majors should follow as closely as possible the following program:

First year

English 11

Group A

Group B (General Education 14)

Foreign language

One elective (A course which meets the general Bachelor of Arts requirement in Fine Arts is recommended.)

Second year

English 13a and three other half-courses in English from groups of courses open to sophomores, namely: 16a, 19b, 111, 126a, 142b, 143a, 144b, and General Education 18

Group A

Foreign language

One elective. Courses recommended are Fine Arts 11, Music 12, General Education 143, History 12 and 230, French 113, German 141, Latin 123b and Greek 123a

Third Year

Two half-courses in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Foreign language

Group B (a year course in philosophy)

One elective

Fourth year

English 150b and one other half-course in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Three electives

PRIZES IN ENGLISH

The Hoyt Poetry Prize of fifteen dollars is awarded annually by the Department of English for the best poem by an undergraduate. This is the interest on a fund established by the alumni as a memorial to Prentiss Cheney Hoyt, Professor of English at Clark University from 1909 to 1920.

The Loring Dodd Drama Contest, inaugurated in 1955, offers a prize of \$30 to the student writing the best one-act play. Loring Dodd was Professor of English from 1910 to 1949 and also Chairman of the English Department.

Courses in English

During the academic year 1958-59 the following courses were given: General Education 17, and English 11, 12a, 13a, 16a, 19b, 101b, 105, 111, 117b, 121a, 126a, 142b, and 150b.

Courses in English are classified under the following headings:

- I Composition
- IIA Literature, Surveys and Other General Courses
- IIB Literature, Special Periods or Individual Authors
- III Public Speaking and Dramatics

<i>Course number</i>		<i>Classification</i>
11	I	Composition
12	III	Public Speaking
13a	IIA	Literature, Surveys, etc.
16b	I	Composition
19b	I	"
101b	IIB	Literature, Special Periods, etc.
104	IIB	" " " "
105	IIB	" " " "
107a	IIB	" " " "
110	IIB	" " " "
111	IIA	Literature, Surveys, etc.
113	IIB	Literature, Special Periods, etc.
117b	IIB	" " " "
121a	III	Public Speaking
122b	IIB	Literature, Special Periods, etc.
126a	IIB	" " " "
127b	IIB	" " " "
142b	IIA	Literature, Surveys, etc.
143a	IIB	Literature, Special Periods, etc.
144b	IIB	" " " "
150b	IIA	Literature, Surveys, etc.

I. COMPOSITION

II. Composition and Literature.

The purpose of English 11 is to develop clarity and accuracy in reading and writing and to introduce the student to the various types of literature. Open to freshmen. STAFF

16b. Creative Writing.

Projects in the writing of expository prose, narrative fiction, the one-act play and verse. INSTRUCTOR TO BE ANNOUNCED.

19b. Intermediate Composition.

Further training in the basic principles of composition. Attention is given word choice, sentence and paragraph structure, and organization. Exposition is emphasized. Individual conferences. INSTRUCTOR TO BE ANNOUNCED.

IIA. LITERATURE: SURVEYS AND OTHER GENERAL COURSES

13b. Introduction to Poetry.

Required of English majors.

MR. CARTER

General Education 17. Major British Writers.

See "General Education" immediately preceding the alphabetical list of "Departments and Courses."

III. A Survey of American Literature.

[Not offered 1959-60. To be offered 1960-61.]

MR. HABER, *first semester*

MR. LETENDRE, *second semester*

142b. The English Novel to Thomas Hardy.

[Not offered 1959-60. To be offered 1960-61.]

MRS. CUNNINGHAM

150b. Senior Survey.

Required of English majors in the senior year. MR. ANDERSON

IIB. LITERATURE: SPECIAL PERIODS OR INDIVIDUAL AUTHORS

101b. Chaucer.

[Not offered 1959-60. To be offered 1960-61.]

MR. ANDERSON

104b. Seventeenth Century.

MR. CARTER

105. Eighteenth Century.

[Not offered 1959-60. To be offered 1960-61.]

MR. CARTER

**107a. English Literature from Beowulf to
1600 (exclusive of drama).**

[Not offered 1959-60. To be offered 1960-61.]

MR. ANDERSON

110. Victorian Literature. MR. BEARD
113. Shakespeare and the Elizabethan Drama. MR. ANDERSON
- 117b. Literature of the Romantic Period.
[Not offered 1959-60. To be offered 1960-61.]
MR. HASTINGS
- 122b. Modern Poetry. INSTRUCTOR TO BE ANNOUNCED.
- 126a. Modern British and American Drama. [Not offered 1959-60.]
MR. LETENDRE
- 127b. Modern Continental Drama. [Not offered 1959-60.]
- 143a. Modern British Novel. INSTRUCTOR TO BE ANNOUNCED.
- 144b. Modern American Novel. MR. BEARD

III. PUBLIC SPEAKING

- 12a. Public Speaking.
The course will be repeated in the second semester. Permission of the instructor required. MR. BORRNER
- 121a. Persuasive Speaking and Conference Techniques.
Permission of the instructor required. MR. BORRNER

Department of Fine Arts

(Art and Music)

ASSISTANT PROFESSOR COWARDIN, ASSISTANT PROFESSOR RAFFMAN,
AND ASSOCIATE PROFESSOR (AFFILIATE) GRAZIANI

With the cooperation of Associate Professor Nicol, Associate Professor Barlow, and Associate Professor Edwards.

The department offers two programs for a major in Fine Arts. One is intended for those interested primarily in the history of art. The other is designed to provide sound training in fundamentals for qualified students whose principal interest is the practice of art.

History of art. Specific requirements for the major in history of art may be had upon application to the department.

All courses in the history of art make use of the collections of The Worcester Art Museum. In addition at least one trip per semester is required to museums in the Boston area.

Practice of art. The major in the practice of art is offered jointly by the University and the School of the Worcester Art Museum. It aims to provide, within the framework of a liberal arts program, a solid preparation for specialized study or practice in any of several branches in the field of art. Students selecting this program take thirteen courses at the University (which must satisfy the general requirements for the bachelor's degree and must include Fine Arts 11 and General Education 14), and seven courses at the Museum School. These are distributed over the four-year college period as follows:

	Clark	Museum School
Freshman year	4	1
Sophomore year	4	1
Junior year	3	2
Senior year	2	3

Candidates for admission to Clark University who wish to elect the major in practice of art should each submit, along with the

application form, a portfolio of about a dozen representative pieces of work in drawing, painting, design, etc., which should be clearly marked with the candidate's name and address.

Courses in Fine Arts

During the academic year 1958-59 the following courses in Fine Arts were given: 11, 12b, 15, 192a, 199.

11. An Introduction to Western Art.

Lectures during the first four weeks deal with general topics such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture, and painting in the light of their time. Open to freshmen. New students not admitted in the second semester.

MR. COWARDIN

111. Basic Drawing and Painting.

Introduction to the drawing or depiction of objects in the field of vision; theory and practice in the statement of line, form, light and shade, and perspective. Study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in museum collections. Open to freshmen majors and to a limited number of non-majors with the permission of the instructors. Nine hours of studio work per week at the Worcester Art Museum. Indivisible.

MR. GRAZIANI AND MISS MURPHY

12b. A Survey of Western Painting.

General problems of pictorial expression are treated as well as the historical aspects of style. Open to freshmen. May not be counted in addition to Fine Arts 11.

MR. COWARDIN

15. Art of the Renaissance in Italy.

MR. COWARDIN

16. Art of the Seventeenth and Eighteenth Centuries.

[Not offered 1959-60]

191a. The Art of the Ancient Near East and India.

MR. COWARDIN

192a. The Art of China and Japan.

[Not offered 1959-60]

MR. COWARDIN

199. Advanced Painting and Design.

General designation for all courses at the School of the Worcester Art Museum above the elementary level. Ordinarily open only to majors in the practice of art.

STAFF OF THE MUSEUM SCHOOL

Courses in Music

During the academic year 1958-59 the following courses in Music were given: 12a, 12b, 13b, 15b.

12a. Introduction to Music.

The essential elements of musical construction. Prerequisite for all other courses in music except 15b. MR. RAFFMAN

12b. The Baroque and Classical Periods.

A stylistic survey of the 17th and 18th centuries.

MR. RAFFMAN

13a. Twentieth Century Music.

MR. RAFFMAN

13b. Romantic Music.

[Not offered 1959-60]

The 19th century.

MR. RAFFMAN

14b. Problems in Theory.

The application of theoretical principles to analysis and composition. Prerequisite: permission of instructor.

MR. RAFFMAN

15b. Keyboard Music.

Musical construction and style as seen through the medium of the keyboard. May be substituted for but not credited in addition to 12a.

MR. RAFFMAN

Freshman Orientation Course

Orientation. A required non-credit course for freshmen. Two periods per week are required for the first half of the first semester and one period per week is required for the remainder of this semester. Additional class periods are planned during the second semester to discuss the selection of a major field of study.

Topics include the history and nature of the University; liberal and vocational education; the curriculum; the individual in relation to the institution, the staff, and fellow students; the library; reading, note taking; methods of study; examinations; and the physiology of sex.

General Orientation
Physiology of Sex

DEAN HUGHES AND DEAN BORGER
DR. BOYNTON AND DR. KRESSLER

Geography

PROFESSOR VAN VALKENBURG, PROFESSOR MURPHY, PROFESSOR LOUGEE, PROFESSOR WARMAN, INSTRUCTOR BURNHAM, VISITING PROFESSOR RAISZ, VISITING PROFESSOR CAROL, VISITING LECTURER VILLMOW

A complete statement of the organization and special requirements in the Graduate School of Geography will be found in an earlier section of the catalog under the heading "The Graduate School of Geography."

UNDERGRADUATE PROGRAMS

Undergraduates planning to major in geography or to enter graduate work in geography are urged to consult the geography staff early in their undergraduate course in order to plan suitable programs which will include the essential courses in related fields.

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five, of these courses must be in geography.

Geography 10, Principles of Geography, is usually taken in the freshman year; or, as early as possible after the selection of

Geography as a major. One or two of the following courses may be taken during the sophomore year: Geography 12a, Geography 16, Geography 191.

Such courses as 25b, 28a, and regional courses should not be undertaken until the junior or senior years. Juniors of superior standing and seniors may take, by special permission, number "2" geography courses, such as 201, 20b, 282b, 283b, 285a, 285b.

COURSES IN FIELDS RELATED TO GEOGRAPHY

Geography majors should plan their work in related fields so that the basic courses prerequisite to the advanced courses of the junior and senior years are taken in the freshman and sophomore years.

Subjects in Group A (Science and Mathematics) strongly recommended by the staff are geology and biology. However, where special interest is expressed in physics, chemistry, psychology, or mathematics, the student's program can be planned to include these subjects.

Related fields are found listed under Group B (Social Science). General Education 14 is recommended for the freshman year. Courses recommended for the sophomore year are: Economics 11, Government 15, History 12, Sociology 11. More advanced work in the fields of sociology, international relations, psychology, and philosophy will depend largely upon the individual student's interests.

HONORS

A junior or senior pursuing an "honors program" in geography is afforded an opportunity to associate with other students in the Graduate School of Geography. For example, a superior student, after petitioning and receiving approval of the College Board and the Secretary of the Graduate Board, may undertake Advanced Cartography; Physiography of the Western Hemisphere; Soils; Land Use; Climatology; Problems of Economic Geography; and some graduate regional courses. On rare occasions an undergraduate student has been invited to participate in the Fall Field Camp of the Graduate School.

Independent honors projects are under the personal supervision of one of the staff specialists. Such research work must be

completed within the semester in which it is started, or proof advanced that the study warrants more time. The staff also conducts an oral examination to ascertain the achievement of an "honors student."

The Alpha Sigma Chapter of Gamma Theta Upsilon, national geography fraternity, provides professional and social affiliations between graduate and undergraduate geography majors.

Courses in Geography

During the academic year 1958-59 the following courses were given: 10, 12a, 16, 191, 20b, 28a, 201, 282b, 283b, 285b, 286b, 30, 32, 34, 36, 37a, 37b, 315, 361, 399a.

PRIMARILY FOR UNDERGRADUATES

10. Principles of Geography.

Physical phases of geography and application of principles of geography to selected regions. Open to freshmen. Juniors and seniors admitted only by special permission of the instructor.

MR. WARMAN

12a. Introduction to Climatology.

Practical exercises in meteorology and climatology, use of weather instruments, discussion of various theories. Prerequisite: Geography 10 or equivalent.

MR. WARMAN

16. Economic Geography.

The world's mineral, plant and soil resources with special reference to use and conservation. Prerequisite: Geography 10 or Economics 11, or equivalent.

MR. CAROL

191. Cartography and Graphics.

Preparation of maps, graphs, charts, block drawings. Restricted to twenty, see instructor.

MR. BURNHAM

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

20b. Geography in Education.

Geography in the present-day school system; designed to meet needs of those teaching or expecting to teach geography.

MR. WARMAN

- 25b. Conservation of Natural Resources. [Not offered 1959-60]
- 28a. Geography of New England.
Field and lecture course. Prerequisites: Geography 10 and
Geology 12. MR. LOUGEE
201. Political Geography.
Major political problems of the world as related to geographic
factors and applied to selected regions. MR. VAN VALKENBURG
214. Geomorphology. MR. LOUGEE
- 282b. Regional Geography of Anglo-America. MR. LOUGEE
- 283a. Regional Geography of Middle America. MR. WARMAN
- 283b. Regional Geography of South America. MR. WARMAN
- 285a. Regional Geography of Europe. MR. VAN VALKENBURG
- 285b. Regional Geography of Asia.
[Not offered 1959-60; To be offered 1960-61]
- 286b. Regional Geography of Africa. MR. CAROL
- 289a. Regional Geography of the U.S.S.R. MR. VILLMOW
291. Cartography. MR. BURNHAM
298. Map and Aerial Photograph Interpretation. MR. RAISZ
- 300a. Evolution of Geographic Thought.
Series of lectures on the evolution of geographic ideas and
knowledge: Greek and Roman, early European, German,
French, British and American as well as the contemporary
situation in geographic thought.

PRIMARILY FOR GRADUATE STUDENTS

30. General Seminar.
Required of all graduate students in residence. STAFF
32. Regional Climatology. MR. VAN VALKENBURG
- 33a. Soils Geography. [Not offered 1959-60]
34. Land Utilization and Planning.
Physical and cultural factors bearing on purposes and patterns
of land use. MR. CAROL

36. Problems in Economic Geography.

Various research fields, research methods, and detailed techniques in mining, agriculture, manufacturing and transportation. MR. MURPHY

37. Human and Cultural Geography.

Distribution of races, artifacts, institutions, cultures; the mutual interaction of physical and cultural geographic impacts applied to regions. MR. WARMAN

314. Regional Physiography of the Western Hemisphere.

Two hours lecture and two hours laboratory. MR. LOUGEE

315. Regional Physiography of the Eastern Hemisphere.

[Not offered 1959-60; To be offered 1960-61]

Two hours lecture and two hours laboratory. MR. LOUGEE

333b. Biogeography.

[Not offered 1959-60]

361. Urban Geography.

The modern city from the geographic viewpoint, with emphasis on the American city. MR. MURPHY

391. Cartographic Presentation of the Geographical Landscape.

MR. RAISZ

399a. Field Methods and Studies.

The first three weeks of the first semester. Required of every graduate student not yet admitted to candidacy. STAFF

RESEARCH COURSES

200. Geography in Education.**310. Physiography.****320. Climatology.****330. Soils and Biogeography.****340. Land Use.****350. Agricultural Geography.****360. Economic Geography.****370. Human Geography.****380. Regional Geography.****390. Political Geography.**





Department of Geology

INSTRUCTOR LINGNER

The Department of Geology does not at present offer an undergraduate major. The general course is closely related to geography and is usually required for majors in that department. The laboratory, located on the top floor of the Geography Building, is well provided with illustrative material, including displays of minerals and rocks from classic central Massachusetts localities.

Courses in Geology

During the academic year 1959-60, the following courses were given: 12, 121a, 122b.

12. General Geology.

Presents the earth's surface as a result of the work of streams, glaciers, vulcanism, wind, and other geologic agents. Elementary map interpretation and the identification of common rocks and minerals are included. Emphasis in the second semester is on the evolution of landscapes and life through geologic time. Open to freshmen. Three hours of laboratory work or a field trip per week, with one all day trip in the second semester. Field trips are at the student's expense. Indivisible course.

MR. LINGNER

121a. Introductory Mineralogy.

The identification of minerals by their geometric, physical, and chemical properties. Includes elementary crystallography.

MR. LINGNER

122b. Economic Geology.

A study of the major useful mineral deposits, their origin, structural relations, and geographic distribution.

MR. LINGNER

Department of German

PROFESSOR ARNDT, ASSOCIATE PROFESSOR EDWARDS

DEPARTMENTAL OBJECTIVES

The Department of German offers a program of courses having a fourfold objective: 1, facility in the use of the German language (11, 12, 13, 132); 2, a comprehension of the outstanding cultural epochs in German history (141); 3, an integrated knowledge of major German writers and thinkers (152, 153, 161, 162, 164, 165); 4, an understanding of American and German relations in the past and present (200). Concentration in German, as the mother tongue of Central European geographical areas, provides an indispensable background for an intelligent understanding of American interests in Europe, for work in international relations, and in most scientific fields.

MAJORS

Each major in the department will be required to complete certain extra-curricular reading assignments given in a departmental reading list designed to aid the student in reaching the fourfold objective outlined above. All students wishing to major in German should see the head of the department before they register.

EXTRA-CURRICULAR ACTIVITIES

The department sponsors the following organizations:

THE GERMANIC SOCIETY, an organization of students which provides an informal meeting ground for all those interested in the German language and culture. Its programs are regularly announced on the bulletin board and in the student newspaper.

DELTA PHI ALPHA, a chapter of the national honorary German fraternity. Outstanding students of German who have demonstrated their interest in the German language and culture may be invited to become members of the fraternity upon the nomination of the department.

Courses in German

During the academic year 1958-59 the following courses were given: 11, 12, 13, 141, 162a, 164b.

11. Introductory German.

The regular first-year course in German meeting three hours a week through the academic year. Study of pronunciation, vocabulary, elements of grammar, composition and reading of suitable modern German prose. Indivisible course.

MR. ARNDT, MR. EDWARDS

12. Intermediate German.

The regular second-year course in German meeting three hours a week through the academic year. Review of first year grammar, translation from and into German, exercises in written and oral composition, reading of modern German prose. Prerequisite: German 11 or two years of high school German. Indivisible course.

MR. ARNDT, MR. EDWARDS

13. Advanced German Reading.

The regular third-year course in German meeting three hours a week through the academic year. This course completes the undergraduate language requirement in German. Prerequisite: German 12.

MR. EDWARDS

132. Oral and Written German.

Practice in writing German letters, study of modern prose as a basis for practice in the oral use of the language. May be offered to complete language requirement in German. Prerequisite: German 12.

141. Germanic Civilization.

An illustrated lecture course in English on the literature, history, and the fine arts of the German lands from the Holy Roman Empire to the present day, with special stress laid upon the Reformation, the Age of Enlightenment and the Classical Period.

MR. EDWARDS

152. German Literature I.

A survey of German literary movements from the earliest times to the end of the Classical Period. Alternates with course 153.

MR. ARNDT

153. German Literature II.

A survey of German literary movements from the beginning of the Romantic Period to the present. Alternates with course 152.

MR. ARNDT

161b. The German Lyric.

MR. ARNDT

162a. Faust.

Goethe's *Faust* (both parts) as the highest poetic development of the Faust legend.

MR. ARNDT

164b. The German Novel of Self-Development.

MR. ARNDT

165a. Modern German Drama.

The German drama from 1880 to the present.

MR. ARNDT

200b. German Seminar.

For German majors in their senior year. The work of the seminar will vary from year to year according to the needs of the students.

MR. ARNDT

Department of History, Government and International Relations

PROFESSOR LEE, PROFESSOR HAYDEN, PROFESSOR JORDAN, ASSOCIATE
PROFESSOR COHEN, ASSOCIATE PROFESSOR RAEFF, ASSISTANT
PROFESSOR GROB

UNDERGRADUATE WORK

In its undergraduate program the department gives basic courses in the fields of American, European, and British history, American and European government, and international relations. It offers major programs in history or government, and participates in the interdepartmental programs of International Relations and American Civilization.

All departmental majors must take General Education 14, preferably in the freshman year, Economics 11, normally before the end of the sophomore year, and History 205a and b in either the junior or senior year. Majors in government should also take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the student's special interests, but are expected to include at least two upper class courses in this department, in addition to History 205.

Non-majors who have not taken General Education 14 may elect other courses offered in the department with the permission of the instructor, if in his judgment the student has an adequate background for the course.

GRADUATE WORK

The distinctive feature of the graduate work is the emphasis laid upon individual instruction and guidance by means of informal conferences between instructor and student, small classes, and seminars. The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, the British Empire and the Far East.

The program for the degree of Master of Arts is worked out individually with each student who may choose to concentrate upon history, or government, or international relations. All are required to take the departmental seminar (History 30a). For general requirements, see the announcement of the Graduate School.

For the degree of Doctor of Philosophy, which may be taken in history or international relations, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the A.M., and after a conference between the student and the departmental staff. By the end of the same year the student is expected to have completed satisfactorily two of his fields, either by course work or by passing a three-hour written examination in each; and to complete, normally by enrollment in a seminar or similar course, a task of research and writing. In the second year beyond the A.M., or later, the student must complete the remaining four fields, one or two by course or written examination, and the others by an oral examination. This final step constitutes the "preliminary examination" required by the Graduate Board. For language and other requirements, see the announcement of the Graduate School concerning the doctorate.

The doctoral dissertation, written in one of the six fields which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate tests the candidate's expert knowledge of his special field as well as the relation of his dissertation to it.

International Relations. The procedures toward advanced degrees in this subject are the same as those outlined above. Candidates are expected, however, to take work in economics and geography as part of an integrated program to be arranged by the department in consultation with the other departments concerned.

Courses in History

During the academic year 1958-59 the following courses were given: General Education 14, History 12, 201b, 205a, 205b, 212, 23b, 230, 236a, 281a, 282b, 30a, 314a, 331.

PRIMARYLY FOR UNDERGRADUATES

General Education 14. Europe and the United States since 1500.

For a complete description of this course, see General Education. Required of all majors in the department.

12. History of England. [Not offered 1959-60]
Constitutional history is emphasized particularly in the first semester. MR. JORDAN

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

Phil. 19a. Philosophy of History.

See the announcements of the Department of Philosophy.

- 201b. Intellectual History of Europe, 1700-1900. [Not offered 1959-60]
MR. RAEFF

205a. Introduction to Political Philosophy.

A study of the main trends of Western political thought with reference to their underlying social, political and economic realities. Required of all departmental majors. MR. JORDAN

205b. Recent Political Thought.

The conflicting ideologies of our time in their development since the French Revolution. Required of all departmental majors. MR. JORDAN

21. Foundations of Modern Europe.

The later Medieval, Renaissance and Reformation periods. Offered 1959-60 and alternate years. MR. LEE AND MR. RAEFF

212. Europe, 1789-1914.

Mainly concerned with political and international developments. MR. LEE

- 22b. Tudor and Stuart England. [Not offered 1959-60]
MR. JORDAN

- 225a. Recent History of the British Empire. [Not offered 1959-60]
Developments and problems since 1900. MR. JORDAN

23b. Senior Conference in American Civilization.

Required of all seniors majoring in American Civilization. Readings, papers and discussions will help the students review and integrate their course work in this field. MR. GROB

230. Social and Intellectual History of the United States.

Beginning with a brief survey of the European background of American ideas and institutions, this course deals with the main currents in American thought and society from colonial times to the present.

MR. GROB

234a. American Diplomatic History.

From 1776 to about 1941. Offered 1959-60 and alternate years.

MR. HAYDEN

235a. The United States in the Twentieth Century.

Offered 1959-60 and alternate years.

MR. GROB

236a. American Political History, 1828-1877. [Not offered 1959-60]

Beginning with the election of Jackson, this course will emphasize the development of American political parties, Jacksonian democracy, sectionalism, expansionism, the Civil War, and Reconstruction. Offered in alternate years.

MR. GROB

274b. The Modern Far East.

Primarily international relations in the region since 1895.

Offered 1959-60 and alternate years.

MR. HAYDEN

281a. History of Russia from Peter the Great to the Soviet System.

MR. RAEFF

282b. History of the Soviet System.

MR. RAEFF

283a. Historical Development of Eastern Central Europe.

[Not offered 1959-60]

MR. RAEFF

284a. Topics in Eastern European History.

[Not offered 1959-60]

MR. RAEFF

PRIMARILY FOR GRADUATE STUDENTS

30a. Department Seminar.

Introduction to bibliography and methods of research. Required of all first-year graduate students in the department.

MR. LEE AND THE STAFF

314a. European International Relations, 1870-1918.

MR. LEE

331. Problems in the History of the United States.

Individual research topics, supplemented by readings and discussion in the field of United States history.

MR. GROB

GRADUATE READING AND THESIS COURSES

31. Reading	}	In the History and International Relations of Europe.	MR. LEE
310. Thesis			
32. Reading	}	In the History and International Relations of England and the British Empire.	MR. JORDAN
320. Thesis			
33. Reading	}	In the History of the United States.	MR. GROB
330. Thesis			
38. Reading	}	In early Modern and Slavic History.	MR. RAEFF
380. Thesis			

Courses in Government

During the academic year 1958-59 the following courses were given: Government 14, 15, 240, 241, 251a, 254b, 35.

PRIMARILY FOR UNDERGRADUATES

14. International Relations.

A survey of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with the Second World War and later events.

MR. HAYDEN
Assisted by MR. POWERS

15. Introduction to American Government.

A short survey of the theories of the origin and purpose of the state is followed by a study of American government with emphasis on contemporary problems of the federal government.

MR. COHEN
Assisted by MISS TAYLOR

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

240. Seminar in International Relations.

Basic ideas and their application to current problems. Required for international relations majors; open to a limited number of others at the instructor's discretion. MR. HAYDEN

241. **International Law and Organization.** [Not offered 1959-60]
 First semester: the historic principles of international law and their application in the modern world. Second semester: the institutions created to deal with problems of commerce, welfare, and collective security on an international basis. Offered in alternate years. MR. HAYDEN
- 25a. **Comparative Government.**
 The governments and politics of Great Britain and the major European powers. Offered 1959-60 and alternate years. MR. COHEN
- 251a. **American Political Parties.** [Not offered 1959-60]
 American party organizations, pressure groups, and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years. MR. COHEN
- 252b. **Introduction to Public Administration.**
 An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered 1959-60 and alternate years. MR. COHEN
- 253b. **Municipal Government and Administration.** [Not offered 1959-60]
- 254b. **American Constitutional Law.** [Not offered in 1959-60]
 The role of the Supreme Court in the development of policy examined primarily by the case method. Contemporary problems are emphasized. Offered in alternate years. MR. COHEN

PRIMARILY FOR GRADUATE STUDENTS

History 30a. Department Seminar. See courses in History.

341. **Problems in International Relations.** MR. HAYDEN
 351. **Problems in American Government.** MR. COHEN

GRADUATE READING AND THESIS COURSES

- | | | | | |
|------|---------|---|-------------------------------------|------------|
| 34. | Reading | } | In International Relations. | MR. HAYDEN |
| 340. | Thesis | } | | |
| 35. | Reading | } | In American and Comparative Govern- | |
| 350. | Thesis | } | ment and Politics. | MR. COHEN |

Interdepartmental Majors

See announcement listed under "Interdepartmental Majors."

International Relations

See the announcements of the Department of History, Government and International Relations, and those listed under "Interdepartmental Majors."

Department of Mathematics

PROFESSOR BUMER, ASSOCIATE PROFESSOR GORENSTEIN, ASSOCIATE
PROFESSOR STUBBE, ASSISTANT PROFESSOR HAYDEN

UNDERGRADUATE WORK

The Department of Mathematics offers courses leading to an undergraduate major in mathematics, courses necessary for the study of the physical and certain social sciences, and courses for the student who wishes to learn about the fundamental concepts of mathematics primarily for their cultural value.

Five-year courses in mathematics and two-year courses in an allied field of study are required for a major in mathematics. Courses 11, 12, 13, 14a, 214 form the basis of a major. If a student shows by attainment test that he is qualified to do so, he may enter Mathematics 12, omitting Mathematics 11.

GRADUATE WORK

The department offers advanced courses leading to the degree of Master of Arts with the program designed to give the student an understanding of the basic concepts of the major fields of

mathematics and to fit him for further work in the subject if his talents warrant it.

The offerings should provide the student with the essential training in mathematics needed for positions in the scientific laboratories of government and industry and should be of great value to teachers.

The program for the degree of Master of Arts satisfies the requirements stated in the announcement of the Graduate School. A reading knowledge of one foreign language is required of candidates.

Graduate scholarships and assistantships are available.

Courses in Mathematics

During the academic year 1958-59 the following courses were given: Mathematics 11, 12, 13, 14a, 214, 218, 219 220b, 222, 223.

PRIMARILY FOR UNDERGRADUATES

11. Fundamentals of Mathematics.

An elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal number, the concept of limit and some brief attention to elementary probability and statistical inference. MR. BUMER AND MR. HAYDEN, with the assistance of MISS KASPARIAN AND MR. COTZIN.

12. Calculus.

An introduction to differential and integral calculus, this course is essential to further work in mathematics as well as to work in applications in the natural and social sciences. Prerequisite: Mathematics 11, or its equivalent.

MR. STUBBE, MR. GORENSTEIN, AND MR. HAYDEN

13. Intermediate Calculus.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals and a brief introduction to differential equations. Prerequisite: Mathematics 12.

MR. STUBBE

14a. Differential Equations.

Ordinary differential equations with applications to geometry, physics, chemistry, and mechanics. Prerequisite: Mathematics 12. MR. STUBBE

14b. Differential Geometry.

Elements of the metric geometry of curves and surfaces in Euclidean space developed by methods of calculus and analytic geometry extended to three dimensions. Prerequisite or taken concurrently: Mathematics 13. MR. STUBBE

17. Mathematical Statistics. [Not offered 1958-1959]

Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 12. MR. BUMER

General Education 110. Fundamental concept of mathematics.

For description of this course, see courses listed under General Education.

**FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS**

214. Advanced Calculus.

Topics selected from among partial differentiation, integration, infinite series, improper integrals, Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 13. MR. HAYDEN

215. Modern Algebra.

An introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 12. MR. GORENSTEIN

216. Functions of a Complex Variable.

Analytic functions, line integrals, conformal mapping, Riemann surfaces. Prerequisite or taken concurrently: Mathematics 214. MR. STUBBE

218. Functions of a Real Variable. [Not offered 1959-60]

Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration, functional analysis. Prerequisite or taken concurrently: Mathematics 214. MR. HAYDEN

219. **Projective Geometry.** [Not offered 1959-60]
Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12.
MR. GORENSTEIN
- 220b. **Boundary Value Problems of Mathematical Physics.**
The solution of boundary value problems, especially those of heat conduction and the wave equation by Fourier series, spherical harmonics, Bessel functions and other orthogonal developments.
MR. STUBBE
221. **Topology.**
Point set topology, metric spaces, dimension theory, introduction to algebraic topology.
MR. HAYDEN
222. **Topics in Analysis.**
Content will be changed from year to year to fit the needs of graduate students.
STAFF
223. **Topics in Algebra.**
Content will be changed from year to year to fit the needs of graduate students.
STAFF
- 224b. **Elementary Theory of Numbers.**
A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Mathematics 12. STAFF

Department of Philosophy

ASSOCIATE PROFESSOR BECK, ASSISTANT PROFESSOR CLIVE

The Department of Philosophy offers courses designed to broaden the student's perspective and help him trace the relations among the various fields of knowledge. These courses may also form the basis of a major in philosophy.

A major in this department consists of four courses in philosophy and three additional courses in related fields. The specific courses in related fields are determined in the light of the student's special interests.

Courses in Philosophy

During the academic year 1958-59 the following courses were given: 11a, 11b, 12, 13a, 13b, 15a, 15b, 16, 18b.

11a. Logic and Scientific Method.

The principles of valid reasoning and inductive methods; the application of these principles and methods to the problems of the natural and social sciences; and the consideration of the relation between logic and problems of value. Open to freshmen.

MR. BECK

11b. Problems of Philosophy.

The nature and method of philosophy. The application of philosophical method to contemporary personal and social problems. A detailed analysis of some typical problems in the various fields of philosophy. Open to freshmen.

MR. BECK

12. History of Philosophy.

The movements of philosophical thought from the early Greeks to the present day. First semester: Greek and Medieval Philosophy. Second semester: Modern Philosophy. Not open to freshmen. Prerequisite for second semester: One half-course in philosophy or General Education 14.

MR. CLIVE

13a. Problems of Ethics.

[Not offered 1959-60]

Important ethical theories. Designed to acquaint the student with the problems and scope of ethics, and to aid him in the formulation of an ethical outlook. Offered in alternate years. Open to juniors and seniors.

MR. BECK

13b. Philosophy in Literature.

Man—his nature, relationship to himself, to others, and to God, his values and self-understanding—in continental literature since the late nineteenth century. Philosophical issues to be raised include causation in historical explanation, the emergence and meaning of nihilism, the dynamics of faith and unbelief, the phenomenology of estrangement and loneliness, and the nature of art. Authors studied: Tolstoi, Dostoyevsky, Mann, Kafka, and Camus. Open to juniors and seniors. Prerequisite: One half-course in philosophy.

MR. CLIVE

14a. Social Philosophy.

The principles underlying social structure and functions. The examination of the goals, purposes, norms, and ideals of social process, and the relation of that process to the individual good. Offered in alternate years. Open to juniors and seniors.

MR. BECK

15a. Philosophy of Religion.

[Not offered 1959-60]

Perennial themes such as the nature of man, the existence of God, literalism versus imagination, and the meaning of providence in history. Readings focused on classics of the Judaeo-Christian tradition with a fair selection from twentieth-century existential and analytic writers. Offered in alternate years. Open to juniors and seniors. Prerequisite: One half-course in philosophy.

MR. CLIVE

15b. Philosophical Anthropology.

The essential nature of man, his place in nature, culture, and society; the sociology of knowledge and art; and the historical and natural dimensions of the human conditions. Prerequisite: One-half course in philosophy or permission from the instructor.

MR. CLIVE

16. Contemporary Philosophy.

[Not offered 1959-60]

Important thinkers representative of modern developments in philosophy, together with emphasis on the historical roots of their thought. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. BECK

17a. Readings in Ancient Philosophy.

Advanced work in the writings of one or more of the important philosophers of the ancient period. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. CLIVE

17b. Readings in Modern Philosophy.

Advanced study of representative thinkers of the modern period. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. CLIVE

18b. History of American Philosophy.

A survey of important philosophical ideas in America with emphasis on their relationship to American experience.

MR. BECK

19a. Philosophy of History.

Problems of history, including meaning and causation, the ontology of historical being, and the nature of historicism.

Prerequisite: One course in history and one course in philosophy; or permission of the instructor.

MR. CLIVE

Education 290b. Philosophy of Education.

Described in the announcement of the Department of Education.

Department of Physics

PROFESSOR ROOPE, ASSOCIATE PROFESSOR GUNTER

UNDERGRADUATE WORK

The department offers fundamental courses required in preparation for the study of chemistry, biology, meteorology and allied sciences, medicine, dentistry, engineering and science teaching, as well as courses leading to professional or graduate work in physics.

The requirement for a major in physics consists of Physics 11, two courses from Physics 15, 16, 17, 124, either Physics 22 or 23, Mathematics 11 and 12, and Chemistry 11. In addition, electives in physics, mathematics and chemistry are desirable. Students preparing for graduate work should also obtain a good reading knowledge of French and German while in college.

Physics 11 or its equivalent is the normal prerequisite for all other courses in the department. Courses numbered 15 or higher, except 17 and 124, require the use of calculus and should not be elected without consulting the instructor in charge. Courses 15, 17 and 23 each require a limited amount of laboratory work to be done at the discretion of the instructor and at such times as will not interfere with regularly scheduled courses.

GRADUATE WORK

Students whose records are approved by the department may be admitted by the Graduate Board to work leading to the degree of Master of Arts.

Courses in Physics

During the academic year 1958-59 the following courses were given: General Education 10, Physics 11, 17, 124, 22, 29.

PRIMARILY FOR UNDERGRADUATES

General Education 10. An Introduction to Physical Science.

For description of this course see courses listed under General Education. Either General Education 110 or Physics 11, but not both, may be taken for credit.

11. General Physics.

Mechanics, heat, electricity and magnetism, wave motion, sound, and light. Indivisible course. Open to freshmen.

MR. GUNTER

13. History of Physics.

Offered irregularly.

MR. ROOPE

15. Heat and Thermodynamics.

Thermometry, calorimetry, the thermal properties of matter in the solid, liquid and gaseous states, the laws of thermodynamics, applications to a wide range of phenomena. Prerequisites: Physics 11 and Mathematics 12.

MR. ROOPE

16. Optics.

First semester, geometrical optics and its application to various optical instruments. Second semester, principles and application of physical optics. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently).

MR. GUNTER

17. Introduction to Modern Physics.

An elementary treatment of physical experiment and theory of the past sixty years including the more recent atomic and nuclear developments.

MR. ROOPE

124. Fundamentals of Electronics.

[Not offered 1959-60]

First course in electronics designed to give a broad, largely non-mathematical, background for the understanding of electron tubes and their associated circuits. The application of

modern electronic devices to the fields of physics, chemistry, biology, meteorology, and navigation is discussed. Prerequisite: Mathematics 11. MR. GUNTER

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

22. **Theoretical Mechanics.** [Not offered 1959-60]
Prerequisite: Mathematics 12. Mathematics 13 is desirable but not required. MR. ROOPE
23. **Electricity and Magnetism.**
The fundamental laws of electric and magnetic circuits and fields, and the elements of electromagnetic wave propagation and their application to antenna design. Prerequisites: Physics 11 and Mathematics 12. Mathematics 13 is desirable but not required. MR. GUNTER
24. **Advanced Electronics.**
A detailed theoretical study of certain electronic phenomena from a mathematical point of view. Prerequisites: Mathematics 12 and Physics 124 or Physics 23. Mathematics 13 is desirable but not required. Offered irregularly. MR. GUNTER
27. **Basic Electrical Measurements.**
Measurement of voltage, current, frequency, power, capacitance, inductance, resistance, etc., from D.D. to microwave frequencies. Prerequisites: Mathematics 12, Physics 23, Physics 24 or equivalent.
- 28a. **Theoretical Spectroscopy.**
The origin of line and band spectra in both emission and absorption spectrophotometry. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently). Physics 16 and 17 are desirable but not required. MR. GUNTER
- 28b. **Experimental Spectroscopy.**
Theory and applications of the optical and electrical instruments used in an experimental spectroscopy, and the principles of spectrochemical analysis. Laboratory practice in the use of prism and grating spectrographs, micro-densitometers, interferometers, and their associated photographic and electrical techniques. Prerequisites: Physics 16 or Physics 28a, and Mathematics 12 (may be taken concurrently). Physics 17 is desirable but not required. MR. GUNTER

25. Honors Course.

Theoretical and/or experimental work in mechanics, thermodynamics, or nuclear physics. MR. ROOPE

26. Honors Course.

Theoretical and/or experimental work in optics, electronics, or spectroscopy. MR. GUNTER

29. Topics in Advanced Optics.

Theoretical and experimental aspects of topics selected from the following: spectroscopy, polarimetry, communications theory, diffraction theory, lens design, and electro-optics. Prerequisites: Mathematics 13 and Physics 16. Physics 23 is desirable but not required. MR. GUNTER

217. Nuclear Physics.

MR. ROOPE

PRIMARYLY FOR GRADUATE STUDENTS

31. Theoretical Physics.

Double course.

MR. ROOPE

300. Research in Experimental Physics.

STAFF

301. Research in Theoretical Physics.

STAFF

Department of Psychology

PROFESSOR WERNER, PROFESSOR WAPNER, PROFESSOR (AFFILIATE) PHILLIPS, PROFESSOR (AFFILIATE) WEINREB, ASSOCIATE PROFESSOR BAKER, ASSOCIATE PROFESSOR CROCKETT, ASSOCIATE PROFESSOR DEMBO, ASSOCIATE PROFESSOR GWINN, ASSOCIATE PROFESSOR KAPLAN, ASSOCIATE PROFESSOR WIENER, ASSOCIATE PROFESSOR (AFFILIATE) BENDA, ASSISTANT PROFESSOR COMALLI, ASSISTANT PROFESSOR KRUS, ASSISTANT PROFESSOR LEVENTHAL, ASSISTANT PROFESSOR WOHLWILL, LECTURER BIBACE, LECTURER GOODGLASS, LECTURER KOELLA, LECTURER LIPTON, LECTURER RAEFF, LECTURER TREHUB, LECTURER VARJABEDIAN, CONSULTANTS TO THE PSYCHOLOGICAL CLINIC: DR. MORIARTY, PSYCHIATRIST; MISS DEWEESE, PSYCHIATRIC SOCIAL WORKER; DR. FEFFER, CLINICAL PSYCHOLOGIST.

The Psychological laboratories at Clark University were established by G. Stanley Hall immediately after the founding of the University, and constituted one of the first adequately appointed laboratories in this field in America. These laboratories increased rapidly in size and in research possibilities for experimental psychology, and have been remodeled in accordance with present needs. From the outset this research emphasis on experimental psychology was supplemented by work in child study, educational psychology, and mental hygiene. In recent years a comprehensive training program in clinical psychology has been added. Broad integrated training in psychology is stressed, with special concentration being provided in the areas of child and genetic, clinical, social, and general experimental psychology; also in experimental approaches to personality and psychopathology.

Associated with the department is the Institute of Human Development, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on pre- and post-doctoral levels in the comparative developmental approach to behavior.

UNDERGRADUATE WORK

The undergraduate curriculum is designed to meet the needs of: (1) students majoring in psychology; (2) majors in related fields; (3) students wishing an orientation to the field of psychology for general cultural development.

Psychology 11a and 11b are prerequisite to all subsequent courses. Majors are required to take Psychology 11a, 11b, and Psychology 212. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE WORK

Work is offered in the department leading to the degrees of Master of Arts and Doctor of Philosophy. In order to be admitted to the department for a graduate degree, the applicant must have a bachelor's degree, based upon a distinguished college record. Where the department feels that a student lacks the necessary undergraduate preparation in psychology and related fields, specific courses of study will be prescribed.

THE DEGREE OF MASTER OF ARTS. To qualify for the degree of Master of Arts in psychology the student must demonstrate competence in representative areas of psychology. The customary program is five courses, including experimental psychology, statistical methods, and three additional courses supplemented by the writing of a thesis in the area of special interest.

THE DEGREE OF DOCTOR OF PHILOSOPHY. Only students who give evidence of high scholastic attainments will be encouraged to proceed to the degree of Doctor of Philosophy. The obtaining of a Master of Arts degree does not automatically admit the student to the doctoral program. The general requirements for the doctor's degree, other than those for specialization in clinical psychology, include the following. The student is required to pass with distinction four courses during the first year of graduate study and a minimum of four courses during the second year of study. He is required at the end of the second year to demonstrate his competence in psychology by passing with distinction preliminary examinations in the field of psychology as a whole and in an area of specialization. At the present time examinations in the general field include history and systems of psychology, experimental psychology, ge-

netic psychology, learning, normal and abnormal personality, social psychology, physiological psychology, and statistics. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable thesis. For formal dissertation requirements and language requirements, see the general statement concerning advanced degrees in the section of this catalog headed "The Graduate School." At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his special area of concentration.

THE PROGRAM IN CLINICAL PSYCHOLOGY. The department offers a four-year program in clinical psychology leading to the degree of Doctor of Philosophy. For this degree the same standards of proficiency in the general field of psychology as mentioned above apply.

In addition the student will be required to demonstrate mastery of the use of clinical methods. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies.

One to two years of internship, or its equivalent, is included in this four-year program. Institutions and agencies cooperating in providing practicum and research facilities are: Bradley Home, Bedford V.A. Hospital; Boston State Hospital; Boston V.A. Hospital; Boston V.A. Mental Hygiene Clinic; Brockton V.A. Hospital; Children's Medical Center, Boston; Clark University Psychological Clinic; Hartford V.A. Mental Hygiene Clinic; Judge Baker Guidance Center, Boston; Lowell V.A. Mental Hygiene Clinic; Northampton V.A. Hospital; Providence V.A. Mental Hygiene Clinic; Rutland Heights V.A. Hospital; Springfield V.A. Mental Hygiene Clinic; Worcester V.A. Mental Hygiene Clinic; Worcester Youth Guidance Center; and the Worcester State Hospital. Internships may be arranged in other selected hospitals and clinics. V.A. and U.S. Public Health Service Training Stipends are available for outstanding students.

During the first two years the student will include in his program courses basic to a thorough understanding of psychology as well as specialized courses in clinical psychology. He will be required to take the regular preliminary examinations; in this case the examination in the area of specialization will be in clinical psychology.

Research for the dissertation should normally be completed during the fourth year at the University. The length of the program will vary depending upon individual circumstances.

Courses in Psychology

During the academic year 1958-59 the following courses were given: 11a, 11b, 103b, 150a, 170, 172a, 201a, 209, 212, 300, 301, 303, 305, 307, 308a, 309b, 313, 315a, 318, 320, 330b, 331, 333, 336, 339a, 340b, 350, 390.

PRIMARILY FOR UNDERGRADUATES

11a. General Psychology.

An introduction to the principles of human behavior.

MR. WAPNER

11b. General Psychology.

Prerequisite: Psychology 11a.

MR. WAPNER

103b. The Abnormal Personality.

The development of the abnormal personality and a survey of the major types of abnormal behavior. Prerequisite: Psychology 172a.

MR. BAKER

150a. Introduction to Child Psychology.

MRS. RAEFF

152b. Psychology of Adolescence.

The development of personality during adolescence with special emphasis on personality changes of the adolescent in a modern urbanized culture. Prerequisite: Psychology 11a and 11b.

MRS. RAEFF

160a. Introduction to Quantitative Methods in Psychology.

Problems of psychological measurement and statistical evaluation of psychological data.

MR. WOHLWILL

170. Social Psychology.

The role of social factors in the behavior of individuals and of groups. Among the topics to be discussed are attitudes, prejudice, leadership, and personality and culture.

MR. CROCKETT

172a. Personality Development.

The various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality. Prerequisites: Psychology 11a and 11b.

MR. BAKER

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201a. Learning and Motivation.

The role of learning and motivation in behavior.

MR. GWINN

202b. The Psychology of Thinking.

Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning, and problem solving.

MR. GWINN

209. Developmental and Child Psychology.

Prerequisite: Psychology 11a and 11b plus one additional semester course in psychology. Indivisible.

MR. WERNER

212. Experimental Psychology.

A general survey of experimental psychology with the aim of acquainting the student with scientific methods and laboratory technique. Lecture 2 hours; Laboratory 3 hours.

MR. WAPNER, MR. WIENER AND MR. COMALLI

220a. Mathematical Approaches to Psychology.

Intensive analysis of several mathematical models used in psychology. Alternate years. Prerequisite: Math. 12, or permission of instructor.

MR. CROCKETT

230b. Senior Seminar in Psychology.

Intensive discussion of special problems in psychology.

STAFF

PRIMARILY FOR GRADUATE STUDENTS

300. Genetic Psychology.

A seminar course.

MR. WERNER AND MR. KAPLAN

301. Clinical Assessment I.

Problems and methods, with field work.

MR. LEVENTHAL

302. **Advanced Psychological Diagnosis of Children.**
Special problems and case studies. STAFF
303. **Clinical Assessment II.**
Advanced course in diagnostic methods and field work.
MR. GOODGLASS
304. **Concept and Method in Psychological Measurement.**
MR. TREHUB
305. **Advanced Experimental Psychology.**
In the first semester attention will be given to problems of perception, and in the second semester to memory, concept formation, and reasoning. Lecture 2 hours; laboratory hours to be arranged. MR. WERNER AND MR. WAPNER
306. **Seminar in Research Methods.**
MR. WERNER, MR. KAPLAN, AND MR. WAPNER
307. **Participation in Psychological Clinic.**
MR. BAKER, MR. WIENER, MR. WEINREB,
MR. MORIARTY, MR. FEFFER, MISS DEWEESE
- 308a. **Psychopathology.**
Major pathological syndromes and their conceptualization.
MR. LIPTON
- 309b. **Theories of Psychotherapy.**
Basic theories of psychotherapy as they relate to practical approaches to patients. MR. WIENER
313. **Statistical Methods.**
The understanding and practice of the statistical methods most valuable in psychological research. MR. CROCKETT
- 315a. **Experimental Methodology and Design.**
Special reference is made to the problems of research planning and experimental design. Various fields will be drawn upon for illustrations. MR. WAPNER
318. **Personality.**
Problems in personality theory and a comparison of various theoretical approaches. MR. WIENER
320. **Social Psychology.**
Problems and theoretical systems. MR. CROCKETT

325. Advanced Child Psychology.

Problems of theory and method in experimental child psychology. MR. WOHLWILL

326. Observational Methods in the Study of Children.

MR. WOHLWILL AND OTHER STAFF MEMBERS

330b. Genetic Psychology of Symbolic Behavior.

A seminar on the basic aspects of symbolic behavior in humans. MR. KAPLAN

331. The Psychology of Learning.

Theoretical viewpoints and experiments in the field of learning. MR. GWINN

333. Personality Evaluation.

An advanced course in the integration of methods of personality diagnosis and case history materials. MR. PHILLIPS

336. Advanced Problems in Psychotherapy.

Offered only to advanced clinical graduate students who are engaged in psychotherapy. Discussions of psychotherapeutic problems and theory in connection with case material.

MR. WEINREB

338a. Clinical Neurophysiology.

Neurophysiological functions as they pertain to human behavior. LECTURER TO BE ANNOUNCED

339a. History and Systems of Psychology.

The historical development of psychological methods, concepts, and theories. MR. GWINN

340b. Physiological Psychology.

Physiological mechanisms underlying psychological processes.

MR. GWINN

342. Research Seminar in Child Psychology.

Discussion of on-going research and of theoretical problems in the area of child psychology. MR. WOHLWILL

345. Basic Concepts in Developmental Psychology.

MR. KAPLAN

346b. Developmental Psychology and Psychoanalysis.

MR. BIBACE

349. Clinical Research Methodology.

Current research methods in clinical psychology. STAFF

350. Research in Psychology.

Individual direction of students in their research projects.

STAFF

390. Departmental Colloquium.

VISITING LECTURERS

NON-CREDIT WORKSHOPS

1. Advanced Workshop in Psychological Statistics.

Selected problems in small sample theory.

VISITING LECTURERS

2. Workshops in Clinical Methodology.

VISITING LECTURERS

3. Workshop in Neuropsychology.

Problems concerning neurological correlates of behavior.

VISITING LECTURER

Department of Romance Languages

PROFESSOR REID, ASSOCIATE PROFESSOR KING, ASSOCIATE PROFESSOR

NICOL, ASSISTANT PROFESSOR BARBERA, INSTRUCTOR DANIELSON,

INSTRUCTOR SELLIN

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: a lower level and an upper level. French and Spanish 11 and 12 are lower level courses. All other Romance language courses are considered as upper level courses.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding.

In the upper level the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature, but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

In addition to the primary function of providing liberal education, a well-planned sequence of courses in this field will serve the practical ends of providing a foundation for teaching, a reading knowledge adequate for advanced study in natural science, social science or the humanities, or a speaking and writing knowledge adequate for use in foreign travel or foreign trade.

A major in Romance languages must comprise:

- (1) Four full courses to be chosen from the following:

French 13, 114, 123a, 151a, 152a, 153b, 154b;

Spanish 13, 114;

Romance Languages 124b.

- (2) French 113 or the equivalent.

- (3) General Education 14, or the equivalent, normally to be completed by the end of the sophomore year.

- (4) At least one course, to be approved by the department, in non-Romance literature.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and in literature.

If at least two units of elementary Latin or elementary Greek have not been accepted for admission to college, a Romance language major must satisfy the classics requirement as prescribed under the heading "Major" in the statement of requirements for the degree of Bachelor of Arts.

Students intending to major in Romance languages should consult Mr. Reid.

A program leading to a degree "with honors in Romance languages" is available to qualified upperclassmen.

Courses in French

During the academic year 1958-59 the following courses were given: French 11, 12, 13b, 14, 114, 152a and 153b.

11. Elementary.

A course for beginners, including the elements of grammar and pronunciation, graded readings, and exercises in speaking and writing simple French. Open to freshmen. Indivisible course.

STAFF

12. Intermediate.

A review of grammar, exercises in composition and conversation, intensive and extensive reading. Prerequisite: French 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course. STAFF

***13. Oral and Written French.**

A third-year course. Admission is subject to approval of the instructor in each semester. The normal sequence is 13A during the spring semester of one year, followed by 13B the following fall semester. The two parts of the course are organized as follows:

A^b.

Analytical study and practice of the elements of communication in French: basic conversation patterns; the sound, rhythm and tone patterns of French pronunciation; review of grammatical topics; exercises in written expression. Conducted in French. Prerequisite: Grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in the spring semester in alternate years. Two regular meetings and one two-hour laboratory period each week. MR. REID

B^a.

[Not offered 1959-60]

Advanced practice of communication in French. Composition, oral reports, classroom discussion. Conducted in French. Prerequisite: French 13A^b, or equivalent skill, to be determined by a placement test. Not open to freshmen. Offered in the fall semester in alternate years. Two regular meetings and one two-hour laboratory period each week.

MR. NICOL

***14. Readings in French Literature.**

A third-year course. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of novels and plays selected for their literary excellence and

* Courses 13 and 14 are "third-year" courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study, who intends to take subsequent courses in literature. Both may be taken for credit.

broad appeal. Prerequisite: French 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. NICOL, MR. DANIELSON, MR. SELLIN

113. Introduction to French Civilization.

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission is subject to the approval of the instructor. May be counted in fulfillment of the general requirement in fine arts, but not of the requirement in foreign language. Offered in alternate years.

MR. NICOL

114. General View of French Literature.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Prerequisite: Grade of B- or higher in French 13 or 14, or the equivalent.

MR. KING

123a. Advanced Language.

An introduction to the problem of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B- or higher in French 13B or the equivalent. Offered in alternate years.

MR. NICOL

***151a. The Middle Ages and the Renaissance.**

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years.

MR. KING

***152a. Classicism.**

[Not offered 1959-60]

A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years.

MR. NICOL

* See footnote on page 192.

***153b. Romanticism and Realism.**

[Not offered 1959-60]

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years.

MR. NICOL

***154b. The Modern Period.**

A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years.

MR. NICOL

Romance Languages 124b. Comparative French and Spanish Phonetics.

[Not offered in 1959-60]

The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. Prerequisites: Grade of B- or higher in French 13A or Spanish 13; elementary knowledge of the other language. Advised for majors who plan to teach either language. Offered in alternate years.

MR. REID

Courses in Spanish

During the academic year 1958-59 the following courses in Spanish were given: 11, 12, 13 and 14.

11. Elementary.

A course for beginners, including the elements of grammar and pronunciation, graded readings, and exercises in speaking and writing simple Spanish. Open to freshmen. Indivisible course.

STAFF

12. Intermediate.

A review of grammar, exercises in composition and conversation, intensive and extensive reading of texts dealing with

* For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in chronological order, but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.





Spain and Spanish America. Prerequisite: Spanish 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course. STAFF

***13. Oral and Written Spanish.** [Not offered 1959-60]

A third-year course. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Admission is subject to the approval of the instructor. Prerequisite: Grade of B- or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular meetings and one two-hour laboratory each week.

***14. Readings in Spanish and Spanish-American Literature.**

A third-year course. The first semester is devoted to Spanish-American, the second semester to Spanish works. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain. Prerequisite: Spanish 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. REID

114. The Literature of Spain.

A general view of Spanish literature with emphasis on the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Attention is given to political and cultural background. Prerequisite: Grade of B- or higher in Spanish 13 or 14, or the equivalent. Offered in alternate years.

MR. BARBERA

Romance Languages 124b. Comparative French and Spanish Phonetics.

For description see under "Courses in French."

* See footnote on page 190.

Directory of Students

1958-1959

Names of students are grouped in three lists:

- I (1) — graduate students, undergraduate students and special students in attendance during the regular academic year 1958-1959;
- I (2) — those who were in attendance less than one semester;
- II — those who attended the 1958 Summer School.

Explanation of letters and symbols:

S — Scholar (graduate)	Ed — education
F — Fellow (graduate)	G — geography
CS — Courtesy Scholar (graduate)	H — history, government and international relations
CF — Courtesy Fellow (graduate)	M — mathematics
59, 60, 61, 62 — undergraduates	Ph — physics
g — students formally admitted to the graduate school	Ps — psychology
s — special students	* — student in residence during the first semester only
B — biology	† — student in residence during the second semester only
Ch — chemistry	
Ec — economics and sociology	

State omitted—Massachusetts.

I (1). GRADUATE STUDENTS, COLLEGE STUDENTS AND SPECIAL STUDENTS IN ATTENDANCE DURING THE REGULAR ACADEMIC YEAR

Name	Home Address	Class	Name	Home Address	Class
†Aareskjold, Helen V., Brooklyn, N. Y.		60	Barry, Richard D., Gardner		60
Aaronson, Anthony E., Worcester		59	Bartolomei, Daniel V., Jr., Falmouth		B g
Abisamra, Philip J., Worcester		61	Bastille, Arthur J., Worcester		59
*Adams, Louise J., Shrewsbury		61	Bates, Richard A., Shrewsbury		60
Adams, Margaret W., Glens Falls, N. Y.		61	Bean, Stephen, Worcester		61
Adelson, Elaine S., Worcester		59	Beckwith, David A., Worcester		60
Adler-Wooters, Helena A., Buenos Aires, Argentina		61	Bedrosian, Peter, Milford		60
Aharonian, Carol I., Auburn		61	Beedle, Norman E., Worcester		60
Ahearn, William E., Wassaic, N. Y.		60	Begley, John H., Spencer		60
Ahlstrom, Alice S., Worcester		59	Beller, Henry K., New York, N. Y.		61
Ahmad, Altaf, Karachi, Pakistan		G F	Benjamin, David S., Worcester		60
Ahn, Hansook, Seoul, Korea		60	Benoit, Sumitra J., Kanke, Ranchi, India		G S
Akerlund, Jane A., Worcester		59	Berg, John H., Worcester		60
Albert, Alice A., Great Neck, N. Y.		61	Berger, Peter L., New Haven, Conn.		60
Aldin, Peter, Cambridge		Ps F	Bergman, Howard S., West Hartford, Conn.		60
Aldis, Thomas L., Carpentersville, Ill.		59	Berry, Arnold E., Webster		Ed g
Allard, Frank J., IV, Leominster		60	Bethune, John L., Baddeck, Nova Scotia, Can.		C S
Allen, Ann I., Worcester		Ed g	Billings, Kenneth J., Webster		61
Allen, Samuel E., Jr., Richmond, Va.		H S	Bisceglia, Albert A., Shrewsbury		59
Almasian, Rosalie, Whitinsville		61	Black, Robert E., Worcester		G S
Altman, Charles S., Clinton		61	Blake, Virgil L., W. Groton		62
Amnott, James R., Danvers		59	Blanchard, Peter, Worcester		Ev
Andersen, Neil R., West Boylston		60	Blomstrom, Peter C., Cranston, R. I.		61
†Anderson, Donald W., Maidstone, Ont., Can.		s	Bogucki, Raymond F., Worcester		C g
Anderson, Edward A., Worcester		62	Bohigian, Theodore A., Jr., Worcester		60
Anderson, Martin J., Jakima, Wash.		H g	Bolan, Richard J., Worcester		60
Anderson, Ralph W., Worcester		59	Boliver, Lillian B., Shrewsbury		59
†Anderson, Robert C., Auburn		Ed CF	Borjeson, Robert C., Worcester		60
*Armstrong, David R., Worcester		s	Borst, Schuyler V., Schenectady, N. Y.		61
Arnold, James M., Worcester		62	Bosshard, Anne M., Melrose		60
Aron, Arlene L., Providence, R. I.		Ps F	†Bostic, Mrs. Corrine E., Worcester		61
Aronson, J. Richard, Brooklyn, N. Y.		59	Bouffard, Norman A., Worcester		59
*Arsenault, John F., Ware		62	Bowles, Janice M., Worcester		62
Arsenault, Lorraine A., Baldwinville		62	Boyd, Ernest B., Worcester		60
Aslanian, Audrey M., Worcester		59	Boyd, Josephine O., Greensboro, N. C.		62
Assimakopoulos, Michael S., Fitchburg		60	Boyer, Lester E., Leicester		61
Babbidge, Theresa G., Worcester		Ed g	Bradbury, Michael H., New Milford, Conn.		62
†Backlin, David L., Worcester		s	*Bradford, Roger R., Worcester		Ec g
Backstrom, Frances G., Worcester		Ed g	Bradley, Joseph F., Bolton		61
Bailey, Bryan A., Gardiner, Me.		59	†Braje, Wilfried, Bielefeld, Germany		H F
Baker, Joyce Ann, South Yarmouth		Ed g	Breen, George J., Worcester		60
Ball, Mrs. Charlotte L., Boylston		Ed g	Brent, Sandor B., Bronx, N. Y.		Ps S
†Ballentine, Michael M. D., West Hyattsville, Md.		s	†Bridgham, Mrs. Elin V., Paxton		Ed g
Balsamo, Salvatore R., Worcester		62	Broberg, Sandra M., Worcester		61
Banning, Harold R., Whitinsville		62	Brodeur, David D., Manchester		G S
†Barnes, Mrs. Caroline B., Sutton		61	Brodsky, Mrs. Joan A., New York, N. Y.		59
†Barnes, James D., Mexico, D. F.		s			

Name	Home Address	Class	Name	Home Address	Class
Brodsky, John, Yonkers, N. Y.		59	Clark, Phyllis A., Worcester		61
Brodsky, Stephen E., Bridgeport, Conn.		60	Clarke, Alice E., Holden		60
Brooks, Bruce J., Worcester		62	Clarke, Eleanor R., Holden		61
†Brooks, Michael J., Fitchburg		62	Clarke, Paul M., Alexandria, Va.		62
Broverman, Mrs. Inge K., Worcester	Ps S		Clarkson, Frank E., Worcester		Ps g
†Brown, Edward V., Caldwell, N. J.		61	*Clarkson, Harry E., Lincoln, R. I.		60
Brown, Harrison J., Worcester		61	Cocchiarella, John P., Milford		60
Brown, Stephen K., Shrewsbury		61	Cohen, Bernard N., Kew Gardens, N. Y.		61
Brunelle, Richard L., Worcester		60	Cohen, Howard D., Worcester		62
Bryant, Charles R., Worcester		60	Cohen, Leah A., Brooklyn, N. Y.		60
Burak, George J., Amherst	Ec g		Colebrook, Elizabeth A., Boylston		61
†Burckes, Margaret L., Sudbury	Ed g		Collins, Clyde E., Worcester		61
Bureau, Paul E., Fitchburg		59	Collins, Mrs. Delores F., Worcester	Ed g	
Burke, Dominick F., Co. Mayo, Ireland		60	Colman, Jonathan C., Bridgewater, Conn.		62
†Burlingame, Clement L., Worcester	Ed g		Condon, A. Gerald, Holden		61
Burner, Charles E., Worcester	Ed g		Condon, Robert P., Worcester	G F	
Burstein, Samuel W., Bridgeport, Conn.		62	Connolly, John, Jr., Wakefield		61
Buscone, Louis J., Jr., Milford		59	Connolly, Vincent F., Worcester	M g	
Butler, Robert K., Shrewsbury	H g		Connor, Kenneth F., Jr., Worcester		62
			Conrad, Jane, Sturbridge		62
Cain, Frank W., Auburn		59	Constantine, Joseph R., Jr., Malden		62
Caldow, George D., Fitchburg		61	Cook, Edward W., Jr., East Hartford, Conn.		59
Calverley, David S., Auburn		60	Cooke, Charles R., Everett		59
*Camara, Mrs. Katherine V., Whitinsville		60	Cotzin, Sumner B., Worcester	M S	
Campaniello, Joseph P., Worcester		61	*Cove, James F., III, Uxbridge	Ed g	
Canty, Jane A., Worcester		60	Crandall, Faye E., Worcester	Ed g	
Carlin, Richard T., Tarrytown, N. Y.		60	Crane, Norman C., West Boylston		59
Carlson, A. Richard, Worcester		61	Cremer, Herbert S., Stow		61
Caron, Henri L., Leominster	Ch g		Cronan, John F., Auburn		60
Carroll, Eileen K., Worcester		60	Cronev, Elizabeth J., Northfield, Vt.		62
Carstens, Mary M., Old Bridge, N. J.		61	Crouse, David A., Stow, Me.		62
†Casey, Thomas M., Lebanon, N. H.	Ps g		Cundall, Patricia A., Worcester		59
Cashman, John W., Worcester		59	Curtin, William P., Jr., Levittown, L. I., N. Y.		62
Caspi, Daniel, Shrewsbury		62	Cuti, Vincent J., Jr., Huntington, N. Y.		60
Casso, Angelo A., Worcester		62			
Cedargren, Carl J., Jr., Emporium, Pa.		59	Dachs, Caroline, Jamaica, N. Y.		61
Cha, Chung Hwa, Seoul, Korea		59	D'Angio, Anita E., Waltham		62
Chakour, Mitchell, Jr., Worcester		60	David, Mary R., Crawfordsville, Ind.		62
Champlin, John L., Worcester		62	Davies, Eleanor C., Worcester		60
Champoux, Ralph W., Jr., Worcester		59	Davis, Beverly, Providence, R. I.		60
Chapman, Curtis L., Worcester		59	Davis, John T., Agincourt, Ont., Can.	G F	
*Chase, Carole E., West Boylston		59	Davison, Raymond R., West Brookfield		61
Chase, Cynthia E., West Boylston		59	Dawson, Mary B., Kingston, R. I.		62
Check, Maxine H., New York, N. Y.		60	†Dean, Robert H., Worcester	G g	
Chester, Anthony J., Fitchburg		60	Deedy, Catherine E., Westfield		61
Chilengerian, Charles, Worcester	Ed g		Degen, Sharon L., Meriden, Conn.		60
Chin, Snow Bing, New York, N. Y.		62	†DelDuca, Benedetto, Caserta, Italy		62
Christensen, Donald R., Holden		62	Delehanty, Patricia A., Fair Haven, Vt.		62
Christofferson, Allen M., Jr., So. Acton		61	Demirjian, Arlene L., Bridgeport, Conn.		62
Christopher, Peter R., Worcester		59	Denardo, Richard S., Waterbury, Conn.		59
Church, Mildred W., Princeton, N. J.		60	*Denechaud, Virginia M., Worcester	Ev	
Cirillo, Leonard E., New York, N. Y.	Ps S		Denny, Duncan, Norfolk, Conn.	Ed g	
Civen, Sherman B., Brookline		59	DeProspro, Ernest R., Jr., Worcester		59
*Clark, John Paul, Easthampton	H S				

Name	Home Address	Class	Name	Home Address	Class
DeRita, David J., Pittsfield		62	Fleming, John J., North Grafton		62
DeToma, Francis J., Worcester		62	*Flexer, Abraham S., Worcester		59
Diamantopoulos, Michael P., Worcester		60	Flodman, Ronald E., Holden		59
Dickinson, Porter S., Fitchburg		60	Florou, Nicholas, Spencer		60
Dickman, Michael B., Brooklyn, N. Y.		60	Fishlin, Barbara D., Flushing, N. Y.		61
DiDomenico, Angelo, Milford		61	Flynn, John F., Worcester		60
DiGregorio, Carl J., Milford		59	Fogg, Dorothy J., Holden		61
DiNunzio, Mario R., Woonsocket, R. I.	H F		Foley, Robert J., Flushing, N. Y.		59
DiStefano, Frank J., Jr., Shrewsbury		59	Ford, Dwain L., Lancaster		Ch S
Dodd, Myrna L., Wetsboro		62	Ford, George G., Worcester		Ed g
Doiron, Roger J., Chisholm, Me.		59	Forman, Cynthia E., Worcester		62
Dolphin, Donald H., Worcester		60	Fort, Peter C., Schenectady, N. Y.		62
Dolphin, Thomas J., Worcester	H g		Forte, Howard D., North Brookfield		62
Donaghue, John A., Wethersfield, Conn.		60	Foster, Elaine E., Worcester		Ed g
Donais, Harriet E., Easthampton		61	Foster, Sandra L., Natick		60
Donsky, Maurice E., Brooklyn, N. Y.		62	Franks, Linda J., Lawrence		61
†Dowd, Peter G., Worcester		62	Fray, Robert F., Auburn		62
*Dowgiert, Paul R., Holden		60	Freedberg, Lois, Worcester		60
Dowling, Robert M., Erie, Pa.	Ps F		Freedman, Stuart R., Worcester		62
Down, Norman E., Saugus		62	†Frese, Maria L., Old Saybrook, Conn.		62
Dresdale, Harold J., Spring Valley, N. Y.		62	Friedman, Stuart D., Worcester		59
Drezner, Peter W., Bayside, N. Y.		62	Frost, Kent S., Worcester		61
Dufresne, Ernest D., Worcester		60	Fuhrman, Robert A., Forest Hills, N. Y.		62
Dunford, Frederick F., Millbury		59			
Dunkin, Barbara G., Milford, Conn.		61	Gadavanij, Vilaichird, Thailand		61
Durkin, Edward F., Worcester		60	Galt, Thomas S., Silver Spring, Md.		62
DuVarney, Raymond C., Jr., Marlboro		62	Gannon, John M., Clinton		61
			†Gans, Paul S., Brooklyn, N. Y.		60
Ede, Elwood K., Worcester		60	Gardner, Francis X., Worcester		60
Eidt, Mildred H., Worcester		60	Gariepy, Roland E., Leominster		59
Eisenberg, Paul D., Worcester		61	Garrity, Ann C., Worcester		Ed g
Elefterakis, Peter J., Westfield		59	Gary, Richard A., Leicester		60
Ellis, John H., Jr., Worcester		62	*Gascoigne, Ransom M., Jr., Southbridge		62
Englund, Robert A., Shrewsbury		60	†Gaudette, Roland F., Jr., Spencer		61
Epstein, Barry D.,			†Gauthier, Edgar A., Farnumsville		Ed g
Long Island City, N. Y.		62	Gay, George H., Jr., Southboro		59
Epstein, Martin B., Lawrence, N. Y.		61	Geiger, Alan L., Wellesley		62
Erickson, Carl J., Fitchburg		59	Gemme, Raymond G., Millbury		Ed g
Erickson, Paul E., Caldwell, N. J.		62	George, Robert P., West Boylston		62
Ericson, Carol K., Worcester	Ed g		Germain, Norman W., Worcester		Ed g
Erle, Richard A., Worcester	Ps g		Gerner, Edward W., Herricks, L. I., N. Y.		61
Evans, Caroline, Worcester		61	Geronimo, Clare E., Worcester		59
Evers, Jane M., Pleasantville, N. Y.		60	Geronimo, Jean M., Worcester		62
			Gertler, Paul, New York, N. Y.		59
Faber, Bernard L., Franklin		59	Giannette, Marion F., Worcester		60
Falk, J. David, Leominster		60	Gillies, Robert B., Oxford		59
Fein, Jacques, Union, N. J.		60	Gillingham, Mary E., Otego, N. Y.		60
†Feldt, Nancy A., Auburn	Ed CF		Gitten, Martin F., Laurelton, N. Y.		62
Fine, Arnold M., Worcester		60	Glanzman, Bertram, Far Rockaway, N. Y.		59
*Fink, Jerome, Worcester	Ed G		Glick, Joseph A., Brooklyn, N. Y.		Ps S
Finkel, Geraldine, New York, N. Y.		62	Glodas, Charles E., North Grafton		62
Finster, Joan L., West New York, N. J.		61	Glodas, Daniel B., Worcester		61
Fisher, Herman P., Leicester	Ed g		Glodis, Francis A., Worcester		61
Fisher, Mrs. Rose M., Worcester		61	Gogol, John M., Westfield		60
Fishlin, Barbara D., Flushing, N. Y.		61	Goldberg, E. Susan, Worcester		59
Flannery, James W., Brookfield		60	Goldman, Lawrence R., Worcester		59
Fleming, Daniel J., Nantucket		62	Goldschmidt, Paul R., Winthrop		61

Name	Home Address	Class	Name	Home Address	Class
Goldstein, Alan D., Worcester		60	Hart, Frederick R., III, Norwell		59
Goldstein, Harold M., Roslindale		Ec F	Hastings, Mrs. Marjorie H., Worcester		62
†Goldstein, Stephen A., Bellerose, N. Y.		61	Hasty, Edward H., Jr., Worcester		59
*Good, Virginia E., Worcester		s	Hatch, Alan T., Auburndale		60
Gottlieb, Mrs. Selma B., Worcester		M g	Hatfield, Colby R., Jr., Leominster		59
Goulart, Joyce F., Wallum Lake, R. I.		62	Hawkes, Mrs. Phyllis V., Worcester		60
Gouron, Ronald E., Riverdale, N. Y.		62	Hayward, Levis W., Jr., Worcester		61
Grace, Stephen E., Worcester		61	Heinert, Dietrich H., Berlin, Germany		Ch F
Grady, Daniel M., Worcester		62	Henry, Nancy E., Auburn		60
Graham, Ian K., Marion		61	*Heon, Raymond P., Worcester		Ec g
Graham, Robert C., Oxford		62	Herrnsdorf, Barbara,		
Grandone, Emmet J., West Sutton		62	E. Hartford, Conn.		62
†Grandone, Roberta M., Barre		Ed g	Herschman, Mrs. Judith S., Worcester		60
†Grandone, Roy F., Barre		Ed g	Higginbottom, Mrs. Grace A., Worcester		59
Granger, Nancy L., Leicester		60	Higgins, Thomas H., Worcester		59
*Grasso, Barbara A.,			Hillner, Linda R., Clinton		61
Waterbury, Conn.		61	Hjelm, Phyllis A., Ashburnham		62
Graves, Everette P., Worcester		H g	†Hodes, Stephen F., Worcester		62
Gray, Mairgreed L. A., Dudley		62	Hogan, Eugene F., Oxford		60
Greenberg, Harvey, New Haven, Conn.		60	Hollow, Doralee, Gouldsboro, Pa.		62
Greene, Nancy M., Worcester		61	Holloway, Margaret F., Worcester		61
Greenwald, Ann E., Great Neck, N. Y.		62	Holloway, Mary J., Worcester		62
Grenet, Allen P., New Haven, Conn.		61	Holmes, Muriel Y., Norfolk, Va.		H S
Grey, David P., Brooklyn, N. Y.		60	†Hopkins, Thomas F., Shrewsbury		B g
Griffin, Thomas G., Pittsfield		62	Horne, Burton, Waban		60
Griffith, Linda P., Worcester		60	†House, Peter W., Auburn		Ec g
Grigg, Robert L., Worcester		60	Hucal, Harry, Utica, N. Y.		61
Grillo, Louis P., Worcester		60	Huhn, William A., Jr., Worcester		59
Grillot, Aleta L., Tiffin, Ohio		G S	Huhtanen, Robert J., Weymouth		G S
Groll, David H., Walpole		62	Humphries, Ogretta A.,		
Gromelski, Bradford A., Barre Plains		60	Washington, D. C.		Ps g
Groves, Donald E., Worcester		60	Hunter, Judith, Shrewsbury		61
Grube, Linda, Putnam, Conn.		60	Hunter, Rudolph R. A., Bombay, India		Ec S
Guertin, Doris G., Worcester		Ed g	†Hurd, Marjorie L., Cherry Valley		Ed CF
Gustavson, Edwin A., Worcester		60	Hutchins, Joyce M., Worcester		61
			Hutchinson, Wanda J., Sharon, Conn.		59
			Hutchinson, William A., Worcester		B S
Hackendorf, Martin R., Melrose		59			
Hadd, Harry E., North Grafton		Ch g	Ingalls, Curtis J., Leominster		Ed g
*Haddad, Herbert H., Worcester		Ph g	Ingraham, Martha J., Worcester		60
Hagberg, Russell C., Millbury		62	*Intorre, Benjamin J., Brooklyn, N. Y.		Ch F
Hagopian, Miasnig, Worcester		Ch g	Irritani, Toshio, Tokyo, Japan		Ps F
Hagstrom, Conrad W., Millbury		59	Isaac, Donald M., Bronx, N. Y.		Ps g
Hagstrom, Judith E., Boylston		61			
Hagstrom, Mrs. Mary F., Worcester		s	Jablonski, Robert E., Pittsfield		61
Hall, Penelope A., Whitinsville		62	Jackson, Mrs. Jane L., Worcester		61
Hallberg, Carol A., Worcester		59	Jackson, Kenneth W., Worcester		59
Hallinan, James M., Worcester		60	Jackson, Paul E., Toronto, Can.		61
Halpern, Lawrence S., Middletown, Conn.		61	Jacobs, Leonard S., Lawrence, N. Y.		61
Ham, Robert J., Worcester		59	Jaffee, David, Worcester		s
*Hammer, Judy L., Wellesley		60	Jarest, Helen B., Townsend		61
Handleman, Chester, Worcester		H g	*Javery, Milton H., Worcester		s
Hardy, Anton G., Manchester, Vt.		Ps g	*Jay, Helen, Northboro		60
*Harriman, Edward R., Fitchburg		60	Jeffrey, John J., Worcester		Ch S
Harris, Nancy E., Gardner		59	Jenkins, Judith A., Albany, N. Y.		60
Harris, Norman J., Milford		61	Jensen, Christian D.,		
Harrison, Arlene G., Worcester		61	Ridgefield, Conn.		62
Harrison, Donald H., Chevy Chase, Md.		61			

Name	Home Address	Class	Name	Home Address	Class
Johanson, Donald, Amenia, N. Y.		62	Kjerting, Richard H., Shrewsbury		62
Johnson, Carle A., Jr., Laconia, N. H.		s	Klein, Judith L., Worcester		59
Johnson, Carolyn R., Leicester		62	Klein, Stanley D., Westwood, N. J.		Ps S
Johnson, Clarke D., Lynn		60	Klutey, Frederick E., Jr., Wilmington, Del.		59
Johnson, Philip F., Worcester		60	Knäbe, Faith M., Springfield		62
†Johnson, Robert F., Rutland		61	*Kneller, Philip B., Spencer		62
Johnson, Roger, Glastonbury, Conn.		60	Koelsch, William A., Williamsport, Pa.		G F
Johnson, Walter B., Worcester		59	Kokernak, John F., Worcester		60
Jordan, Edward A., Storrs, Conn.		Ec g	Koki, Arthur S., Worcester		60
Josephs, Barry S., New Haven, Conn.		59	Koliss, John H., Whitinsville		60
Josephy, Leslie, Flushing, N. Y.		59	Kolligian, Carole N., Worcester		62
†Judge Janet D., Worcester		Ed g	Konfino, Raymond N., Long Beach, N. Y.		61
Jungmann, Henry, New York, N. Y.		59	Kontio, Sallyann, Townsend		59
Kabadian, Edward, Jr., Worcester		60	Koppetsch, Kurt, Remscheid-Hasten, Germany		61
Kain, Stephen H., Lynbrook, N. Y.		62	†Korn, Philip, New York, N. Y.		G g
Kalinick, Andrew, No. Brookfield		Ed g	Korstvedt, Arne J., Allston		Ps g
Kalinowski, Joanna S., Worcester		62	Korstvedt, Mrs. Sylvia L., Allston		Ps g
Kallio, Rhoda J., Shrewsbury		60	*Kotoski, William P., So. Ashburnham		62
Kallio, Mrs. Signe-Maria, Worcester		Ed g	Krag, Ernest C., Northboro		Ev
Kaloosdian, Knarig P., Watertown		60	Kramarz, Robert M., Whitinsville		60
Kaminski, Edward R., Worcester		60	Kramer, Paul, New York, N. Y.		Ps S
*Kane, Barbara T., Worcester		60	Krauss, Jean C., Norwich, Conn.		60
Kane, Paul W., Long Beach, Cal.		59	Krebs, Margery, New York, N. Y.		62
*Kaplans, Helen T., Worcester		60	†Krock, Mrs. Judith B., Worcester		s
Kappel, Gertrude, Pine Plains, N. Y.		62	Kroll, Arthur M., Whitinsville		62
Karagosian, John H., Whitinsville		59	Krutsky, Judith M., Worcester		61
Karcasinas, Katherine S., Southbridge		61	Kuma, Nathan N., Battor, Ghana		62
Kasparian, Cynthia, Whitinsville		60	Kuniholm, Thor H., Gardner		H F
Kasparian, Lucy, Saugus		M S	Kupferman, Allan, Garnerville, N. Y.		B g
Kasperson, Roger E., Northboro		59	†LaBaire, Michael P., Auburn		62
Katz, Herman N., Lakewood, N. J.		60	LaFosse, William D., Fitchburg		60
Katz, Ruth M., Bridgeport, Conn.		59	*Lahtinen, Allan E., Fitchburg		60
Kazarian, Michael, Worcester		59	Lamoureux, Kent B., Worcester		60
†Kazeroid, Francis J., Portland, Conn.		62	Lane, Caroline, Leicester		Ed g
Keating, John J., Fitchburg		59	Langer, Jonas, New York, N. Y.		Ps S
Keim, David L., Ironia, N. J.		61	Langille, James E., Worcester		61
Keith, Stephen G., Monson		59	Langley, Kay F., Newport, Me.		59
Kelley, Alicia M., Worcester		H g	†LaPierre, Robert E., Worcester		61
Kelley, Charline M., Petersham		60	*Lapinsky, George M., Shrewsbury		61
Kelly, Dean W., New Milford, Conn.		62	Larson, John J., Worcester		60
Kempler, Bernhard, Forest Hills, N. Y.		Ps S	Larson, Robert O., Worcester		62
Kent, Mrs. Lillian W., Leominster		G g	Laszlo, Phelps T., Southport, Conn.		B g
*Kerr, Barbara A., Mamaroneck, N. Y.		62	Lavent, Burton A., Arverne, N. Y.		61
*Kerxhalli, Steven T., Worcester		60	Law, Byron R., Conshohocken, Pa.		62
Kesslen, James M., Haverhill		60	Lawford, M. Ellen, Laughlintown, Pa.		61
Khan, Mirza M. T., Hydeabad, India		Ch S	Lawton, Rodger D., Pawtucket, R. I.		62
†Khandelwal, Mrs. Nita L., Bombay, India		62	Lazarus, Dorothy, Worcester		61
*Kim, Chung Yum, Seoul, Korea		Ec S	LeBeau, Raoul J., E. Brookfield		60, s
Kim, Sang Kyong, Seoul, Korea		H S	LeBoeuf, Mrs. Janine A., Dudley		59
Kimball, Virginia, Nashua, N. H.		59	Lee, Francis M., Brooklyn, N. Y.		62
Kinell, Edwin E., Worcester		59	Lefebvre, Ronald G., Shrewsbury		59
Kirschner, Clifford J., Woodmere, L. I., N. Y.		61	Lefferts, Michael, Mt. Vernon, N. Y.		62
Kirshenbaum, Allen M., Providence, R. I.		61	Leger, Ann L., Reading, Pa.		H S

Name	Home Address	Class	Name	Home Address	Class
Leith, Mrs. Barbara K., Worcester		Ed g	Martin, Ann F., Worcester		61
*Lemberg, Mrs. Ina R., Worcester		61	Martin, Jerome L., Worcester		61
Leonard, Louise R., Shrewsbury		60	Masing, Ulv, Ashcroft B. C., Canada		61
Leonard, Thomas J., Worcester		62	Mason, Richard, Worcester		61
Lepkowski, James W., E. Templeton		62	Matsuo, Taku, Fukuoka-ken, Japan		Ch S
Leven, John H., Longmeadow		62	Mattson, Marcia A., Worcester		61
†Levenson, Mrs. Sophie, Worcester		s	Matuszek, John M., Jr., North Grafton		Ch S
Levine, Leonard R., Nyack, N. Y.		62	McAnern, Richard G., Andover		61
Lewandowski, Frances C., Worcester		60	McCabe, James E., Northboro		s
Lightfoot, William I., Hudson		60	McCarthy, Timothy, Methuen		62
Lindgren, Richard E., Worcester		59	†McClinton, Willa L., Newark, N. J.		62
Lingis, Mary J., Worcester		59	McCune, Jay E., Cambridge		60
Lingner, Mrs. Sally M., Worcester		Ed g	McElwee, Theodore R., Northboro		60
Lisser, Richmond W., Montreal, Can.		61	McFarland, Joseph H., Worcester		Ps g
Ljungberg, Doris R., Worcester		Ed g	McGuire, Patricia A., Worcester		Ed g
Ljungquist, Ross, Worcester		61	McKenzie, Robert K., Worcester		Ev
Locke, Sandra, Worcester		61	McKey, Richard H., Jr., Wonalancet, N. H.		H F
Lockhart, Robert E., Fitchburg		59	McKinley, Carol J., Westbrook, Me.		62
Lodge, John V., Gloucester		62	McLeod, Duncan E., Clinton		61
†Loewenberg, Robert J., Bronx, N. Y.		61	McMaster, Paul, Worcester		Ch g
Loewus, Ann L., Washington, D. C.		59	McPherson, Donald D., Jr., Worcester		s
Lonnroth, Nancy M., Shrewsbury		61	Meltzer, Glenn A., Worcester		62
Looker, Robert B., Lynn		G S	Melville, Gwendolyn I., Wilkesboro, N. C.		59
*Looney, Marguerite M., Worcester		H g	Messier, Donna L., Saundersville		61
Lord, Arthur C., Jr., Bridgewater		G F	Messing, Robert, Brooklyn, N. Y.		59
†Lorenz, Sally, Worcester		s	Michaud, Paul A., VanBuren, Me.		59
Lowe, Roland C., Lakewood, R. I.		Ps S	Migliozzi, Casto A., Worcester		62
Lowney, Gerald M., Worcester		59	Miller, Mary E., Cherry Valley		59
†Lucas, Mrs. Agnes P., Barre		Ed g	Miller, Susan P., Worcester		59
Lundquist, Donald F., Worcester		60	Minasian, Frank S., Shrewsbury		61
Lundquist, Marilyn B., Holden		61	Mintz, Mrs. Alisa B., Worcester		59
Lundstrom, Robert E., Millbury		59	Mitchell, Albert R., Temple, Me.		G F
Luongo, Dona R., Fitchburg		60	Mitchell, Jeffrey M., Ashburnham		61
Lurie, Steven M., Hewlett, N. Y.		61	Mitchell, Robert A., Worcester		59
Lynch, Mrs. Jeannette S., Brookfield		Ed g, s	*Moe, Helga E., Delmar, N. Y.		60
Lyon, Anthony E., Franklin		60	Mont, George E., Worcester		Ch S
Lyons, Charles D., Stuart, Iowa		Ch S	Montgomery, Robert E., Norwich, Conn.		59
Lyons, Sister Marion, Wellesley Hills		G g	Mooney, Robert E., Jr., Worcester		61
Macewicz, Agrippina A., Worcester		G F	Moore, Gordon S., Roanoke, Va.		62
†Mack, Norman B., Lynbrook, N. Y.		s	Morelle, Loretta M., Shrewsbury		59
Mack, Virginia J., Worcester		Ed g	Morrison, Richard A., Lincoln, R. I.		61
Macklow, Irwin B., Milford		Ed g	Morro, Arleen J., Manchaug		62
Mackown, Stuart A., Concord, N. H.		60	Morrow, Barbara A., Monson		59
MacRae, Theodore N. U., Worcester		59	Morse, Stephen, Great Neck, N. Y.		62
MacRitchie, Cynthia G., Ashland		60	*Moschos, Thomas C., Worcester		s
Madnick, Ronal C., Worcester		59	Moscofian, Nancy, Whitinsville		60
Magoon, Albra L., Manchester, N. H.		59	Moulton, John M., Hastings, Nebr.		G g
*Mahassel, Raymond A., Worcester		s	Mourginis, Constantine L., Holden		Ed g
Mahoney, Mary E., Concord, N. H.		60	†Movsesian, Edgar A., Jr., Haverhill		Ed g
Maloney, Patricia A., Worcester		59	Mullaney, Lawrence B., Worcester		Ed g
Maniatis, Christina G., Athol		62	Murphy, Michael G., Wethersfield, Conn.		60
Mank, Herman L., Jr., So. Ashburnham		62	Murray, Gary R., Winslow, Me.		60
*Margulis, Stephen T., Bronx, N. Y.		Ps g			
Markun, Geraldine, Brookline		59			
*Marshak, Mrs. Lois J., Westboro		60			
Marshall, Thomas A., Fiskdale		Ed g			

Name	Home Address	Class	Name	Home Address	Class
Murray, John P., Nantucket		61	Pehl, Spencer K., Shrewsbury		61
Murray, Mary J., Worcester		61	Pero, Perry R., Worcester		61
Myers, Claire G., Asbury Park, N. J.		62	Perry, Robert J., Millbury		62
			Peters, R. Norman, Worcester		61
Nair, Patricia J., New Britain, Conn.		Ps F	*Petralias, Nicholas G., Worcester		s
Namuj, Marcos Y., Jerusalem, Jordan		59	Petralias, Nicholas S.,		
Nathan, David, Far Rockaway, N. Y.		59	Pyrgos-Ilias, Greece		Ec g
†Naumowicz, Mrs. Adele J., Auburn		Ed CF	Petridis, Harry G., Hyannis		61
Navickas, Margaret A., Worcester		60	Phares, Carl, III, Sarasota, Fla.		60
Neal, Harry C., Gainesville, Texas		G S	Philip, Andrew L., Worcester		59
Nelson, Charles H., Worcester		60	Phillips, Eleanor H., Shrewsbury		s
Nichols, David A., Fitchburg		61	*Pierce, Janet A., Leominster		59
Nichols, Edgar, Worcester		Ch g	Pierce, John S., Leominster		59
Nidorf, Louis J., Worcester		Ps F	Pinate, Mrs. Elena Ch-de,		
Nightingale, Ray W., Limestone, Me.		60	Panama, Rep. of Panama		H g
Nikitas, Theodore M., Fitchburg		59	Pinate, Ernesto,		
Noshkin, Victor E., Jr.,			Panama, Rep. of Panama		H g
San Francisco, Cal.		Ch S	Pinckney, Annette M., Cambridge		Ec g
			Pinkus, Frances A., Worcester		61
Oakes, Mrs. Nancy H., Holden		60	Pisarczyk, Stephen J., Jr.,		
O'Connor, Gerald P., Worcester		61	N. Brookfield		62
Oertly, Frederick J., Norwalk, Conn.		60	*Pitcher, Mrs. Doris R., Worcester		Ed g
Ohwaki, Sonoko, Sendai, Japan		Ps F	Platt, Charles, III, Southboro		H g
O'Janne, Linda A., Paxton		61	Plich, Mrs. Anna S., Worcester		Ed g
Oliver, Mary E., Holden		62	Pond, Thomas W., Grafton		62
†Oliver, Richard E., Worcester		60	*Pontius, Dieter J. J., Worcester		s
Olson, David Q., Worcester		62	Potash, Ethel J., Worcester		59
Olson, Marjorie L., Worcester		Ed g	*Powers, Michele A., Wheelwright		62
Olund, Robert N., Auburn		59	Powers, Vincent E., Worcester		H F
Osterroth, Peter H., Fitchburg		62	Pratt, Bruce S., North Grafton		62
Oswell, Barbara G., Worcester		H g	Press, Russell G., Jr.,		
*O'Toole, Barbara G., Clinton		Ed g	Wethersfield, Conn.		59
†Overstreet, Gerald E., Ringwood, Okla		G S	*Preston, Richard E.,		
Ozols, Austra, Manchester, Conn.		61	Carlton, Washington		G F
			*Price, Robert D., Holden		s
Pacek, Stanley E., Worcester		59	Prouty, Joel W., Auburn		61
Palmer, Geraldine R., Bel Air, Md.		62	Prouty, Wayne D., Auburn		62
Pang, Gerrit A., Honolulu, T. H.		61	Prowa, Switlana, Manchester, Conn.		62
Pantos, Ernest J., Worcester		60	Pucilauskas, Dolores D., Worcester		62
Paparella, Catherine A., Worcester		60	Pucilauskas, JoAnn G., Worcester		61
*Paranjape, Mrs. Vijaya M.,			Pulaski, Joan R., Worcester		61
Poono City, India		Ed g			
*Park, David A., Shrewsbury		60	Qadir, Abdul, Karachi, Pakistan		Ec F
*Parker, James L., Ashburnham		H g			
Parnell, Francis W., Jr., Millville		61	Raila, Ruth A., Worcester		59
Parslow, Richard F., Webster		61	Ranch, David J., Worcester		62
Pasceri, Gregory J., Worcester		59	Raphaelson, Elliot, Worcester		59
Paskevich, Michael P., Nashua, N. H.		61	Rappaport, Michael K.,		
*Pasquerella, Alfred J., Worcester		61	Brooklyn, N. Y.		62
Passler, Richard D., Lawrence		61	Rawden, Fiske E., Brighton, Mich.		G S
Pasternack, David, Mt. Vernon, N. Y.		62	Rawson, Frederick C.,		
Patashnik, Sanford L.,			Honolulu, T. H.		61
Spring Valley, N. Y.		62	*Raymond, Susan C., Worcester		Ps g
Pearsall, Richard E., Worcester		62	Razansky, Donald B., Newburgh, N. Y.		59
Pearson, Belva J., Minneapolis, Minn.		61	Redford, Harvey R., Far Rockaway, N. Y.		60
Pearson, Mrs. Margaret J., Webster		Ed g	Reilly, James A., Worcester		59
Pearson, Mrs. Nancy R., Holden		59	Reilly, Mrs. Judith G., Chester, Conn.		Ph S

Name	Home Address	Class	Name	Home Address	Class
Reilly, William T., Shrewsbury		H g	Sandy, I Made, Denpasar, Indonesia		G g
Reseska, Richard W., Northport, N. Y.		G S	Santoian, Barbara A., Worcester		60
†Rettig, Mrs. Estelle A., Holden		Ed g	Sargent, Bradford H., Charlton		60
Reynolds, Mary E., Olean, N. Y.		62	*Savage, Betsy I., Queens Village, N. Y.		61
Rho, Mann Que, Seoul, Korea		60	Savage, Marcia A., Worcester		61
Rice, Jerald A., Millbury		Ed g	Savage, Sandra R., Worcester		61
Rice, Richard T., Worcester		60	Sayre, Joanna M., Worcester		61
Rich, Anthony C., Worcester		62	Schein, Rita H., White Plains, N. Y.		62
Richards, Brendon W., Oxford		59	Scherrer, Gail F., Housatonic		61
†Richards, Mrs. Elisabeth M., Paxton		Ed g	Schiller, Peter H., Memphis, Tenn.		Ps S
Richardson, Anna, Dudley		Ed g	*Schindler, Mrs. Sali, Worcester		s
Richmond, Bradford L., Taunton		60	Schlosberg, Muriel A., Mt. Vernon, N. Y.		62
Rickert, John E., Cedar Grove, N. J.		G F	Schoenfeld, Norman, Haverhill		59
Rigolo, Richard D., Clifton, N. J.		61	Schrader, Hugh D., Catskill, N. Y.		59
Rimens, Gloria R., Washington, D. C.		61	Schulman, Sanford E., Worcester		62
Robidoux, Richard E., Brookfield		59	Schunmann, William C., Jr., Millbury		61
Robinson, Andrew, Worcester		s	Schwartz, Estelle B., Brooklyn, N. Y.		59
Robinson, Betty A., Washington, D. C.		59	Scola, Angelo R., Worcester		59
Robinson, Rebecca, Yarmouth, Me.		62	Scopelliti, Joseph A., Leominster		59
Rockwell, Dale L., New London, Conn.		59	Scott, Cornelia, Andover		61
Rodier, Louis T., Oxford		62	†Seal, Marcia E., Holden		s
Roesmer, Josef, Mainz/Rhein, Germany		Ch F	Sears, Keith G., Worcester		59
Rogers, William F., Leominster		59	Sears, Richard D., Williamstown		60
Rogstad, Barry K., Winchendon		62	Semone, Ronald C., Worcester		60
Romo, Charles D., Peabody		60	Sentance, Wayne R., Worcester		61
Ronberg, James F., Woodbridge, Conn.		60	*Shahnarian, Albert, Worcester		s
Rosenberg, Henry E., Hempstead, N. Y.		Ch F	Shannon, John J., Worcester		Ed CS
Rosenkrantz, Paul S., Springfield		Ps g	Sharfman, Mrs. Dorothy A., Worcester		s
Ross, Barbara L., Miami, Fla.		60	*Sheahan, John W., 2nd, Worcester		s
Ross, Lois R., Worcester		61	Shearer, Susan T., Bolton, Conn.		62
Rossley, Paul R., Leicester		60	Sherman, Mark M., Worcester		62
Roth, David M., Brooklyn, N. Y.		H F	Shields, Rosemary, No. Westport		60
Rotman, Steven, Worcester		60	Shuman, Mark D., Milton		62
Rounds, Charles E., Jr., Wilmington		61	†Sickler, Harry A., Longport, N. J.		G g
†Rousseau, Donna M., Gardner		61	Sills, Richard L., Worcester		60
Royer, Harold T., Gardner		60	Silverzweig, Stanley, Laurelton, N. Y.		60
Rubin, Judith C., Bridgeport, Conn.		62	Simes, Anne R., Shrewsbury		60
Ruddy, Edward R., Worcester		60	Simon, Warren H., Worcester		59
Ruebin, Dorothy E., Manchester, Conn.		62	Skinner, Suzanne I., Leominster		62
Rugh, Patricia J., Manlius, N. Y.		60	*Slyder, Barbara L., Emporium, Pa.		59
Ryan, Jane H., Webster		Ed g	Smelewicz, William P., Worcester		Ed g
Ryan, J. Gerald, Methuen		60	Smith, Carol G., Auburn		60
Sagar, Marlene J., Brooklyn, N. Y.		62	Smith, Laurence C., Jr., Canaan, Conn.		Ps g
*St. Jean, Diane B., Auburn		60	Smith, Venice M., Farnumville		61
St. Pierre, Paul L., Shrewsbury		62	Snyder, Betty A., So. Lancaster		59
Saladini, Joseph J., Leominster		62	Solomon, Melvin R., Worcester		61
Salvin, Leonard G., Worcester		60	Sommer, Sigfried, Worcester		60
Salzer, Mrs. Doris D., Worcester		Ed g	Sonta, Chester J., Jr., Worcester		60
Sameroff, Arnold J., Detroit, Mich.		62	Sorenson, Donald T., Webster		s
Samuel, Howard H., Roxbury		60	Sotir, Sam V., Southbridge		59
Sandholm, Elizabeth A. H., Brooklyn, Conn.		61	†Southwick, Ralph E., Leicester		Ed g
Sandman, Louis M., Worcester		61	†Southworth, William A., Amenia, N. Y.		s
			Souza, Alfred, Jr., Worcester		61
			Spector, Harvey B., New Haven, Conn.		60

Name	Home Address	Class	Name	Home Address	Class
*Speier, Sybil D., Washington, D. C.		Ps g	Traynor, Margaret E.,		
Speiser, Marc H., Far Rockaway, N. Y.		59	Centerbrook, Conn.		62
Spencer, Ann-Louise, Springfield		62	Tryon, Ann C., Pownal, Me.		61
Spiegelman, Arthur, Bronx, N. Y.		61	Tucker, Barbara A., Worcester		Ed g
Spitzner, E. Peter, Orange, Conn.		62	Tucker, Judith A., Charlton		61
Sprague, Walter H., Leicester		62	Tuppa, George J., Worcester		59
Sprott, Gwendolyn R., Charlton		60	Tuthill, Martha L., Middlebury, Vt.		60
Stanick, Carol E., Worcester		59	Twiss, Robert S., Jr., Oxford		s
Stannard, George E., Paxton		M g			
Steiman, Philip, Worcester		60	Uesaka, Yasuo, Tokyo, Japan		60
Stein, Steven H., Flushing, N. Y.		61	Ungerleider, Edward H.,		
Steinhilber, Theodore W., Shrewsbury		62	Detroit, Mich.		62
Steinmetz, Marilyn L., Worcester		62	Unterberg, Lester I., Bronx, N. Y.		G g
Stenmark, Erik E., Worcester		60	Uskokovic, Milan R., Shrewsbury		Ch g
Stetson, Penelope, LaPlume, Pa.		61	Utsunomiya, Takeshi, Tokyo, Japan		Ch S
Stewart, Reed F., Kingston		G S	†Uy, Benjamin G.,		
Stocking, Robert P., Fitchburg		62	Quezon City, Philippine Islands		s
Stone, Martin C., Keene, N. H.		62			
Strandberg, Arne E., Jr., Shrewsbury		59	Vaitiekaitis, Anastasia, Worcester		59
Stressenger, Richard F., Sharon		62	Valimaki, Ronald E., Worcester		61
Striar, Eliot G., Worcester		62	Van Roy, Edward, White Plains, N. Y.		60
Stropp, Richard J., III, Rome, N. Y.		61	Vardzal, Mary B., Union, N. J.		59
Strumpf, George B., Lynbrook, N. Y.		59	†Venclauskas, Aldona, Worcester		s
Sudol, Lorraine A., E. Rutherford, N. J.		60	Venturi, Charles A., Plainville, Conn.		62
Suh, Sang Chul, Seoul, Korea		Ec S	Vigeant, Paul R., East Longmeadow		62
Suh, Sang Yong, Seoul, Korea		62	Virostek, Carol M., Douglas		61
Sullivan, Anthony R., Andover		61	Vitarelli, Robert F., Waterbury, Conn.		62
Sullivan, Joyce P., Auburn		62	Vogel, Peter F., Teaneck, N. J.		59
*Sullivan, Michael V., Worcester		59	Vogel, William, Laureiton, N. Y.		Ps g
Summers, Richard E., Syosset, N. Y.		59	Vuona, Peter H., Worcester		60
†Sundheim, Gail M., Worcester		61	Vuthisathira, Suchitra,		
Sundin, Clark B., Jr., Worcester		59	Bangkok, Thailand		62
Sutherland, Claudia A., Worcester		62			
Suzuki, Tetsuo, Tochigiken, Jaapn		Ec S	Wabrek, Alan J., Manchester, Conn.		59
Svenson, John A., Worcester		60	Wagner, Jeffrey T., Queens Village, N. Y.		62
Swenson, Norman C., Worcester		60	Wagner, Paul R., Fitchburg		60
Switzer, Janet, Providence, R. I.		Ps g	†Wait, Albert H., Jr., Waban		60
Swope, C. Hermas, Barre		61	Walker, Thomas P., Athol		60
Sypek, Donald W., Utica, N. Y.		s	Wallenfels, Helmut,		
			Langen/Hessen, Germany		59
Tangney, Marie F., Worcester		Ed S	Walnut, Aylward J.,		
Taylor, John S., Methuen		62	Barnegat Light, N. J.		G F
*Taylor, Mrs. Rosemary R., Worcester		Ed g	Walsh, Cornelius F., Worcester		59
Temple, Judith M., Upton		62	Walsh, Jane M., Leonia, N. J.		62
Terrio, Frederick J., Worcester		60	Walsh, John F., New York, N. Y.		Ps S
Thayer, Juliana M., Lancaster		60	Ward, Frances E., Freedom, Me.		61
Thompson, Leonard S., Worcester		61	Warfield, Joan, Worcester		s
*Thoutsis, William M., Worcester		60	Wastila, William B., Leicester		60
Thurman, Eulah M., Claremore, Okla.		61	Waters, Patricia R., Cranston, R. I.		61
Thurston, Anthony W., Morningdale		B g	Watson, Charles F. M., Kent, Conn.		62
Tobin, David J., Worcester		Ed g	Watstein, George J., New Haven, Conn.		60
Toder, Phyllis S., Bronx, N. Y.		60	Weaver, P. Kent, Sturbridge		61
Tomasian, Thomas, Jr., Worcester		62	Weiner, Leonard B., Brooklyn, N. Y.		62
Topkin, William E., Mystic, Conn.		60	Weinstein, Linda A., Brooklyn, N. Y.		61
Torrant, John D., Holden		62	*Weinstein, Phyllis M., Brooklyn, N. Y.		62
Tozeski, Stanley P., Shrewsbury		60	†Welch, Teresa, Clinton		s
*Transue, James R., Ridgefield, Conn.		60	Wells, Frank B., Worcester		Ev

Name	Home Address	Class	Name	Home Address	Class
Wells, Mary E.,	Waterbury, Conn.	62	Wolf, Diana M.,	Shrewsbury	61
Werbner, Arthur,	Brighton	60	Woods, William,	London, England	61
Werner, Stephan L.,	Jamaica, N. Y.	60	Wright, Barry N.,	Leominster	60
Wester, Ronald C.,	Gardner	62	Wright, Beverly J.,	Chelmsford	62
*Wetherbee, Otis C.,	No. Grafton	61			
Whitaker, David A.,	Worcester	59	Xanthakos, Jeanne D.,	Southbridge	59
Whitney, Clifton E.,	Worcester	62			
Whitworth, Herbert E.,	Leicester	62	†Yang, Joon Hong,	Seoul, Korea	Ec S
Wichman, Michael H.,	Manchester, Conn.	62	Young, G. Frederick,	Manhasset, N. Y.	59
Willey, Roy C.,	Holden	59	†Yovanovitch, John,	New York, N. Y.	62
Williams, Carol J.,	Auburn	62			
†Williams, Dorothy E.,	Worcester	Ed g	Zajac, Elsie M.,	Ware	62
Willman, Robert H.,	Southbridge	61	Zajac, Leo W.,	Worcester	61
Wilson, Heather,	Lunenburg	62	Zaramba, Kenneth C.,	Rutland	59
Wilson, Kenneth R.,	Worcester	59	Zarr, Gerald H.,	Worcester	59
Wilson, Louis M.,	Sherborn	60	*Zawistowski, Walter J.,	Worcester	Ed g
Wilson, Richard S.,	Methuen	59	Zetterman, Agnes W.,	No. Chicago, Ill.	G S
Wilson, Robert B.,	Worcester	Ed g	Zisch, Anna I. S.,	Worcester	61
Wirarat, Amporn,	Bangkok, Thailand	60	*Zysk, Edward J.,	Oakham	60

I (2). STUDENTS IN RESIDENCE LESS THAN ONE SEMESTER

Backoussis, Epaminondas P.,			Granger, David R.,	Leicester	60
Piraeus, Greece	Ch g		Granger, John R.,	Leicester	61
Chafetz, Samuel,	Worcester	60	Hammond, Charles B.,	Worcester	62
Creamer, Richard M.,	Worcester	Ed g	Herman, John B., Jr.,	Millbury	s
Davidson, Gordon H.,	Worcester	61	Horie, Nobuyuki,	Kyoto, Japan	Ec S
DePoy, Martin L., II,	Westboro	Ph g	Howe, Bradford S.,	Northboro	62
Devoe, Anthony M.,			Jackson, Linda J.,	Worcester	62
So. Plainfield, N. J.	60		Maynard, Francis G.,	No. Grafton	60
Driscoll, John M.,	Worcester	60	ThurLOW, Benjamin J., Jr.,		
Fennimore, Robert C.,	Worcester	60	Worcester		M g
*Gertler, James S.,			Tosches, John P.,	Milford	60
Rego Park, L. I., N. Y.	60		Wolmark, Israel,	Worcester	s

*Deceased, 12-8-58.

II. SUMMER SCHOOL STUDENTS — 1958

Aaronson, Anthony E.,	Worcester	Baljian, Vahe V.,	Worcester
*Achilles, Charles M.,	Geneva, N. Y.	Banks, William F., Jr.,	Worcester
Adelson, Elaine S.,	Worcester	Barton, George S.,	Worcester
Aho, Leo O.,	Southbridge	†Beck, Mildred-Louise,	Worcester
Aldis, Thomas L.,	Carpentersville, Ill.	Behrendt, Douglas M.,	Howard, R. I.
Anastation, Nicholas J.,	Millbury	Beller, Henry K.,	New York, N. Y.
Andersen, Neil R.,	West Boylston	†Benedict, Karl T.,	West Boylston
Anderson, Carolyn H.,	West Boylston	*Benevento, Eugene A.,	Fair Lawn, N. J.
Anderson, Donald W.,	Worcester	†Bergman, Caral P.,	West Hartford, Conn.
Anderson, Ralph W.,	Worcester	†Bergman, Howard S.,	West Hartford, Conn.
Asnes, Russell S.,	Framingham	Berry, Earl D.,	North Brookfield
		Bills, Beverley,	West Boylston
Babbidge, Theresa G.,	Worcester	Bisceglia, Albert A.,	Shrewsbury
Backstrom, Mrs. Frances G.,	Worcester	Bissell, Joyce H.,	Worcester
Baker, John C.,	Whitinsville	*Bloom, Nancy M.,	Worcester

* Intersession only.

† European Field Course Only.

Blossom, Edwin L., Sherborn
 †Blowe, Marion C., Pittsfield
 Boria, Thomas, Millbury
 Borjeson, Robert C., Worcester
 *Bostic, Mrs. Corrine E., Worcester
 Bourque, Edgar A., Worcester
 Bowden, Henry W., Baldwinville
 Bowditch, Susan, Worcester
 Bowlby, Allan P., Hudson
 *Brassard, Raymond J., Barre, Vt.
 *Breen, Rosemary, Shrewsbury
 Broberg, Craig V., Worcester
 Brodeur, David D., Arlington Hgts.
 *Brosnihan, David A., Worcester
 Brown-Grant, Mrs. Evelyn T., Worcester
 Bureau, Paul E., Fitchburg
 Burke, Cynthia M., Worcester
 Burner, Charles E., Worcester

Campana, Carole D., New York, N. Y.
 *Campbell, Wilfred U., South Lancaster
 *Canty, Jane A., Worcester
 Cardamone, John J., Clinton
 *Carey, Martin S., Worcester
 Carr, Calvin, Worcester
 Carter, Mrs. Lorna L., Paxton
 Chafetz, Phyllis M., Worcester
 Chakonas, Paul C., Worcester
 Chang, Mrs. Min Chueh, Shrewsbury
 Chapman, Curtis L., Worcester
 *Chase, Carole E., West Boylston
 Chester, Anthony J., Fitchburg
 †Clark, Carolyn J., Worcester
 Clark, Frederick J., Rumford, Me.
 *Clarke, Paul M., Alexandria, Va.
 Cobb, Ruth A., Holden
 Coccione, Elaine A., Clinton
 Cohen, Nancy B., Worcester
 Collins, Mrs. Delores F., Worcester
 Connolly, Vincent F., Worcester
 Courtney, Richard J., Worcester
 Cown, Mrs. Dorothy W., Woodville
 Craig, Marcia L., Worcester
 Crandall, Faye E., Worcester
 Cremer, Herbert S., Stow
 Culbert, John E., Worcester
 Cullen, Charles G., Worcester

Daby, Walter N., Worcester
 Dander, Emanuel, Gales Ferry, Conn.
 Davidson, Lloyd W., Farmington, Me.
 *Davison, Raymond R., West Brookfield
 Delgado, Rafael A., Worcester
 Denechaud, Virginia M., Worcester
 Denny, Duncan, Worcester
 Dickinson, Porter S., Fitchburg
 *DiGregorio, Carl J., Milford
 †Dimitri, Helen G., Worcester

*Dodd, Robert M., Brookline
 Dorfman, Gerald A., Shrewsbury
 Douce, Hermon L., Jamaica, B. W. I.
 Doyle, Mrs. Marie O., Worcester
 Drawbridge, Geoffrey M., Holden
 Drechsler, Bela, Worcester
 Duclos, Robert J., Sutton
 Dunford, Fred F., Millbury
 Durand, Pierre F., Ware

*Elefterakis, Peter J., Westfield
 Eldsen, Robert E., Southwick
 Ericson, Carol K., Worcester
 Esip, Elizabeth A., Shrewsbury

Feddema, Peter J., Jr., Whitinsville
 Feer, Fredric S., Worcester
 Fink, Stanley P., Milford
 *Fisher, Phyllis M., Worcester
 Fletcher, Nancy M., Holden
 Fletcher, Sally E., Holden
 Flexer, Abraham S., Worcester
 Flodman, Ronald E., Holden
 Flower, David A., Worcester
 Foley, Elizabeth M., Worcester
 Fontana, Lillian, Worcester
 Foster, Elaine E., Worcester
 Freedman, Lawrence E., Worcester
 Frey, Arnold R., Holden
 Frost, Kent S., East Douglas

Gadavani, Vilaichird, Thailand
 Gardner, Leland L., Clinton
 Garratt, Elizabeth A., Auburn
 Gascoigne, Ransom M., II, Southbridge
 †Gauthier, Edgar A., Farnumville
 Geer, Maybelle V., Worcester
 George, Gordon B., Shrewsbury
 George, Robert C., Worcester
 George, Ronald R., Holden
 *Giannini, Frank D., Auburn
 Goldman, Lawrence R., Worcester
 *Gordon, Arthur L., Worcester
 Gordon, Miriam, Worcester
 Gotschall, Laura M., Auburn
 Grasso, Barbara A., Waterbury, Conn.
 Guerin, Henry J., Webster
 Gustavson, Edwin A., Auburn

†Hamilton, Charles A., Jr., Worcester
 Hammond, Charles B., Worcester
 Hammond, Richard J., Worcester
 Handleman, Chester, Worcester
 Hanson, Dixie J., Uxbridge
 Haring, Mrs. Regina M., South Lancaster
 Harriman, Edward R., Fitchburg
 *Harris, H. Norris, Jr., Darien, Conn.
 †Hart, Joanne M., Newton

- Hastedt, Kathryn A., Shrewsbury
 Hasty, Edward H., Jr., Worcester
 Hayes, Bertrand F., Grafton
 Hayes, Daniel F., Worcester
 *Hayes, James T., Shrewsbury
 Henderson, Virginia A., Worcester
 *Hess, Robert P., Fullerton, Pa.
 Hillner, Kenneth P., Clinton
 Hillner, Linda R., Clinton
 Hirshberg, Molly B., Quincy
 Hiskey, Eugene, Cedar Falls, Iowa
 Hoffman, Cynthia L., Worcester
 *Houghton, John S., Worcester
 *Howe, Joyce V., Holden
 *Huhn, William A., Jr., Worcester
 Huhtanen, Robert J., Weymouth
 Hulbert, Clifton H., Worcester
 Hurowitz, Marc I., Worcester
 Hutchinson, William A., Worcester
 Hutton, Doris A., Staten Island, N. Y.
- Inglissis, Mrs. Lois L., Vineland, N. J.
 Ingraham, Martha J., Worcester
- Jablonski, Stephen F., Jr., Webster
 Jackson, Kenneth W., Worcester
 Jay, Helen, Worcester
 †Johnson, Nancy A., Worcester
 †Johnson, Philip F., Worcester
 Johnson, Shirley A., Holden
 *Josephs, Barbara E., Worcester
- *Kallio, Rhoda J., Shrewsbury
 Kallio, Mrs. Signe-Maria, Worcester
 *Kaloosdian, Knarig P., Watertown
 Kaplan, Alan G., Worcester
 *Kaufmann, Jack G., New Bedford
 Kazarian, Michael, Worcester
 Keith, Stephen G., Monson
 Kesseli, Paul C., Shrewsbury
 Kesslen, James M., Haverhill
 Kim, Chung Yum, Seoul, Korea
 Kingsbury, Mrs. Virginia H., Worcester
 Kinnecome, Robert E., North Uxbridge
 Kirn, Edward B., Claremont, N. H.
 Kizirbohosian, Joyce E., Uxbridge
 †Kohrs, Barbara L., Worcester
 †Kohrs, Ethel L., Worcester
 Kontio, Sallyann, Townsend
 Koreywo, Carol A., Worcester
 Kronberg, George H., Worcester
 Kuniholm, Thor H., Worcester
- Lahtinen, Allan E., Fitchburg
 Landow, Charles, Highland Park, N. J.
 Lane, Caroline, Leicester
 Leith, Mrs. Barbara K., Worcester
 Levenson, Mrs. Sophie, Worcester
- Levy, Francine, Paris, France
 Lingis, Mary J., Worcester
 Locke, Sandra, Worcester
 Long, Richard B., Marlboro
 *Lurie, Steven M., Hewlett, N. Y.
 *Lyon, Anthony E., Franklin
- MacPhee, John A., Jr., Worcester
 Magnusson, Alva E., Worcester
 Malouf, D. Faris, Woonsocket, R. I.
 Maple, Ronald C., Worcester
 Marshall, Thomas A., Fiskdale
 Matthews, Olive H., Worcester
 Mattimore, Norine M., Worcester
 Mayor, Richard P., Lawrence
 McDonnell, Mary M., Worcester
 McDonough, Anne L., Worcester
 McGrath, William J., Worcester
 McGuire, Patricia A., Worcester
 McKeon, Robert F., Worcester
 McLeod, Sally J., Paxton
 †McNamara, Edna A., Worcester
 McPherson, Donald D., Jr., Worcester
 Melder, Susan, Worcester
 Michaud, Mary A., Shrewsbury
 Miller, Susan P., Worcester
 Mintz, Mrs. Alisa B., Worcester
 Mita, Mrs. Patricia M., Worcester
 Mochau, Barbara-Joan, Worcester
 Montgomery, Robert E., Norwich, Conn.
 Morelle, Loretta M., Shrewsbury
 *Morin, Wilfred W., Millbury
 Morse, Constance V., Brookfield
 Moschos, Thomas C., Worcester
- Nevins, Nannette E., Hudson Falls, N. Y.
 †Nierendorf, Phyllis R. L., Worcester
 Nimbark, Ashakant D., Sutton
 Niss, Stephen L., Worcester
 Nodine, Ralph T., Templeton
 Norman, Mrs. Margaret A., Shrewsbury
- O'Connor, Mrs. Lois I., Princeton
 O'Leary, James A., Jr., Worcester
 Ollikkala, William C., Fitchburg
 Olson, Marjorie L., Worcester
 O'Neil, John J., Marlboro
 *O'Toole, William F., Worcester
- Papelian, Mary, Milford
 Park, Won Taik, Seoul, Korea
 Parker, Dorothy M., Westboro
 Parker, James L., Ashburnham
 Peirce, Priscilla E., Westboro
 Pendleton, Judith, West Boylston
 *Perry, Manuel J., Jr., Storrs, Conn.
 Petralias, Nicholas S., Pyrgos-Ilias, Greece
 *Petridis, Marie E., Hyannis

- Pinate, Mrs. Elena Ch. de,
Panama, Rep. of Panama
- Plich, Mrs. Anna S., Worcester
- Pollock, Bernard C., Worcester
- Potash, Ethel J., Worcester
- Power, James D., III, Worcester
- *Pressman, Sheila, Chelsea
- Prifty, Helen B., Worcester
- Pulaski, Joan R., Worcester
- Qadir, Mrs. Mahoob J.,
Karachi, Pakistan
- Queen, Mrs. Sylvia A., Marlboro
- †Quinn, Mary W., Pittsfield
- *Racki, Paul A., Leicester
- Rayle, Mrs. Bernice, Northboro
- *Redman, Peter, Pittsfield
- Reid, Ellen A., Little Rock, Ark.
- Remmer, Harvey I., Worcester
- Reschke, O. Paul, Worcester
- Reta, Taye W. G., Addis Ababa, Ethiopia
- Rhodes, Mrs. Helen W., West Upton
- Rice, Jerald A., Millbury
- Richards, Brendon W., North Oxford
- *Riordan, Richard P., Worcester
- Robbio, Andrea A., Worcester
- *Robinson, Betty A., Washington, D. C.
- Rockwell, Dale L., New London, Conn.
- Rothschild, Edgar, Worcester
- Rousseau, Leona D., Gardner
- *Rowe, Minott R., Worcester
- Rowland, Laura E., Waterford, Conn.
- Ryan, Jane H., Webster
- Sack, Barbara H., Worcester
- St. Onge, Patricia A., Shrewsbury
- Salmonsens, Glen W., Worcester
- *Sampson, James J., Worcester
- †Sapkas, Athena, Worcester
- Schrader, Hugh D., Catskill, N. Y.
- Schulman, Sanford E., Worcester
- Scola, Angelo R., Worcester
- Scopetski, Peter J., Worcester
- Seibel, Benjamin, Worcester
- Shaw, Douglas B., Westboro
- Sickler, Harry A., Longport, N. J.
- Sills, Richard L., Worcester
- *Silver, Michael, Worcester
- *Skinner, Joan E., Worcester
- Sommer, Sigfried, Worcester
- Sonta, Chester J., Jr., Worcester
- Soter, Victor E., Southbridge
- Sotir, Sam V., Southbridge
- Spaulding, Sondra J., West Boylston
- Stanhope, Russell H., Worcester
- Stark, Mrs. Alice M., New York, N. Y.
- Stark, Claude A., New York, N. Y.
- *Steinberg, Lloyd B., Scarsdale, N. Y.
- Stidsen, Ronald J., Worcester
- *Strumpf, George B., Lynbrook, N. Y.
- Stubblebine, Robert D., Worcester
- Sudol, Lorraine, E. Rutherford, N. J.
- Suh, Sang Chul, Seoul, Korea
- Sullivan, Michael V., Worcester
- Sullivan, Richard E., Worcester
- Sullivan, William F., North Grafton
- *Syms, Helen A., Shrewsbury
- Takala, Ralph J., Rutland
- Tangney, Donald J., Worcester
- Thavisin, Chongrak, Worcester
- Thomas, Robert N., Aspinwall, Pa.
- †Topkin, William, Mystic, Conn.
- Tucker, Barbara A., Worcester
- Uesaka, Yasuo, Tokyo, Japan
- Valimaki, Ronald E., Fitchburg
- Velzis, Frances A., Baltimore, Md.
- Venclauskas, Mrs. Aldona, Worcester
- Vigeant, Paul R., E. Longmeadow
- Vuthisathira, Suchitra, Bangkok, Thailand
- Wagner, Paul R., Fitchburg
- Walker, Austin W., Westboro
- Walker, Philip E., Worcester
- Wallenfels, Helmut,
Langen/Hessen, Germany
- Walsh, Cornelius F., Worcester
- †Wasiuk, John G., East Douglas
- Werme, Paul H., Worcester
- White, Joseph N., Winchendon Springs
- Wilkes, Charles E., North Oxford
- *Wilson, Richard S., Methuen
- Wondolowski, Anthony S., Worcester
- Woods, William, London, England
- Worthington, George B., Auburn, Wash.
- Zacher, Mark W., Worcester
- Zakrzewski, Walter, Jr., Worcester
- Zysk, Edward J., Oakham

SUMMARY OF STUDENT ENROLLMENT FOR 1958-1959

Undergraduates			
	Men	Women	
Freshmen	124	67	
Sophomores	106	73	
Juniors	147	60	
Seniors	115	44	
	Men	Women	Total
Total Undergraduates	492	244	736
Graduate Students	145	68	213
Special Students	27	13	40
Evening College (enrolled in day college)	4	1	5
TOTALS — Men's College, Women's College and Graduate School	668	326	994
1958 Summer School	206	132	338
Total Students	874	458	1332
Less duplications	75	42	117
Net totals	799	416	1215
Evening College*			
Fall term 1958	431	212	643
Spring term 1959	354	168	520

* Does not include those enrolled for non-credit courses.

Degrees Conferred

In the Calendar Year 1959

BACHELOR OF ARTS

Elaine Sima Adelson
 Alice Solveig Ahlstrom, Cum Laude
 Jane Alice Akerlund, Magna Cum Laude
 and with Highest Honors in Chemistry
 Thomas Lewis Aldis
 Jay Richard Aronson
 with Honors in Economics
 Audrey Mary Aslanian
 Bryan Albert Bailey
 with Honors in Economics
 Rosalind Francine Barker
 Lillian Blanche Boliver
 with Honors in International Relations
 Norman Arthur Bouffard
 Joan Audrey Brodsky
 John Brodsky, Cum Laude
 Louis Joseph Buscone, Jr.
 Carl John Cedargren, Jr., Cum Laude
 Chung Hwa Cha
 Carole Elaine Chase
 Cynthia Ellen Chase, Cum Laude
 Peter Robert Christopher
 Sherman Bernard Civen
 Edward Werner Cook, Jr.
 with Honors in Chemistry
 Patricia Anne Cundall, Cum Laude
 Ernest Rocco DeProspero, Jr.
 Frank James DiStefano, Jr.
 Frederick Francis Dunford
 Peter John Elefterakis
 Carl John Erickson, Cum Laude
 Bernard Lewis Faber
 Abraham Sidney Flexer,
 Magna Cum Laude
 Ronald Everett Flodman
 Robert John Foley
 Stuart David Friedman
 George Henry Gay, Jr.
 Clare Eileen Geronimo
 Paul Gertler
 Robert Bruce Gillies
 Bertram Glanzman
 Esther Susan Goldberg
 Martin Reinke Hackendorf, Cum Laude
 and with Highest Honors in Chemistry
 Conrad Walfred Hagstrom
 Carol Ann Hallberg, Cum Laude
 Nancy Ellen Harris
 Colby Ray Hatfield, Jr., Cum Laude
 Wanda Joanna Hutchinson
 Kenneth Warner Jackson
 Walter Bernard Johnson
 Barry Steven Josephs

Leslie Josephy
 Henry Jungmann
 Knarig Pauline Kaloosdian
 Paul Wayne Kane
 Roger Eugene Kasperson, Cum Laude
 and with Honors in Geography
 Ruth Margaret Katz
 John Joseph Keating
 Virginia Kimball
 Edwin Ellis Kinell
 Judith Libby Klein, Cum Laude
 Sallyann Kontio, Magna Cum Laude
 Kay Frances Langley
 Janine Anne Leboeuf
 Francine Levy
 Mary Jane Lingis
 Ann Lee Loewus, Magna Cum Laude
 Gerald Mansfield Lowney
 Robert Edward Lundstrom, Cum Laude
 and with High Honors in Chemistry
 Ronal Cyril Madnick
 Albra Louise Magoon
 with Honors in Sociology
 Patricia Ann Maloney
 Geraldine Markun
 Gwendolyn Irene Melville, Cum Laude
 and with Honors in Government
 Robert Messing
 Paul Alfred Michaud
 Mary Ellen Miller
 Susan Peckham Miller
 Robert Arnold Mitchell
 *Wilfred William Morin, Jr.
 Barbara Anne Morrow
 Marcos Yacoub Namuj
 with Honors in Economics
 David Nathan
 *George Bradford Oickle
 Robert Nils Olund
 *William Francis O'Toole
 Nancy Richardson Pearson
 John Sturtevant Pierce
 Ethel Jean Potash
 Russell George Press, Jr.
 Ruth Ann Raila
 Elliot Raphaelson
 James Alfred Reilly
 *Idrian Navarre Resnick
 *Taye Reta
 Brendon William Richards
 Richard Ernest Robidoux
 Betty Ann Robinson
 Dale Lawrence Rockwell
 William Francis Rogers

* As of June 8, 1958.

Estelle Betty Schwartz,
Magna Cum Laude
Angelo Ralph Scola
Keith Gaskin Sears
*Michael Silver
Barbara Louise Snyder, Cum Laude
Betty Ann Snyder
Marc Herbert Speiser
Carol Elizabeth Stanick
*Claude Alain Stark, Cum Laude
Harold Charles Stein
Lloyd Bernard Steinberg
George Bernard Strumpf
*Sang Chul Suh
Michael Vincent Sullivan
Phyllis Sally Toder
George John Tuppa

Anastasia Vaitiekaitis
Mary Barbara Vardzal
Peter Frank Vogel
Alan John Wabrek
Helmut Wallenfels, Summa Cum Laude
and with Highest Honors in
Government
Leonard Baruch Weiner, Cum Laude
Roy Chester Willey
with Honors in Geography
Jeanne Demetra Xanthakos
with Honors in English
George Frederick Young
Janet Pierce Zanoni, Cum Laude
Gerald Howard Zarr, Magna Cum Laude
and with High Honors in International
Relations

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (Evening College)

Leo Oliver Aho, Magna Cum Laude

Henry Walter Bowden

BACHELOR OF SCIENCE IN GENERAL STUDIES (Evening College)

Mary Fallon Hagstrom
Regina Mary Haring
Ernest Charles Krag, Summa Cum Laude

Aldona Patricia Lukshis
Robert Kenneth McKenzie,
Magna Cum Laude

BACHELOR OF BUSINESS ADMINISTRATION

Ralph William Anderson, Jr.
Albert Armando Biscaglia
*Raymond Joseph Brassard
Frank William Cain
John William Cashman
Charles Roland Cooke
Norman Charles Crane
Richard Steven Denardo
Roland Edmond Gariepy
Lawrence Robert Goldman
Robert Joseph Ham
Harvey Hartley Hartleb
Edward Holdsworth Hasty, Jr.
Thomas Henry Higgins
with Honors in Business Administration
*Stephen Frank Jablonski, Jr.
Philip Fritz Johnson
Frederick Ernest Klutey, Jr.
Richard Einar Lindgren

Robert Earl Lockhart
Theodore Norman Ulmond MacRae,
Magna Cum Laude and with Highest
Honors in Business Administration
*David Lee Meadows
Theodore Michael Nikitas
Andrew Louis Philip
Donald Brian Razansky
Joseph Anthony Scopelliti
Warren Harold Simon
Sam Vangel Sotir
Arne Eric Strandberg, Jr.
Clark Bernard Sundin, Jr.
*Philip Edward Walker
Cornelius Francis Walsh
with Honors in Business Administration
Richard Stanley Wilson
Kenneth Carlson Zaramba

MASTER OF ARTS

Samuel Earl Allen, Jr.
Nidia Avila
Inge Komers Broverman
John Paul Clark

Roberta Louise Davis
Robert Norman Desmarais
John Anthony Doon, Jr.
Marcia Davidson Erickson

* As of June 8, 1958.

Richard Bruce Erickson
 Jon Arthur Glasgow
 Joseph Arthur Glick
 Robert William Goss
 Loren Nelson Gould
 Anton Gysberti Hardy, Jr.
 Elisabeth Cornelia Huka
 Ogretta Ann Humphries
 Gilbert James Hunter
 William Albert Hutchinson
 George Khalil Kardouche
 Maartini Karno
 Chung Yum Kim
 Sang Kyong Kim
 Donald Anthony King

William Alvin Koelsch
 Rajnikorn Kunawat
 Allan Kupferman
 Jonas Langer
 Ann Louise Leger
 Arthur Calderwood Lord, Jr.
 Stephen Tash Margulis
 George Edward Mont
 Pauline Ellen Riordan
 I Made Sandy
 Peter Harkai Schiller
 Sang Chul Suh
 Robert James Sullivan
 John Francis Walsh
 Nadirsjah H. A. Zaini

MASTER OF ARTS IN EDUCATION

Theresa Gertrude Babbidge
 Joyce Ann Baker
 Charles Edward Burner
 Faye Elizabeth Crandall
 Hermon Lloyd Douce
 Doris Geraldine Guertin
 Andrew Kalinick
 Lawrence Berchmans Mullaney
 Marjorie Louise Olson

John Joseph O'Neil
 Margaret Jocoy Pearson
 Spencer Romeyn Potter
 Mahboob Jahan Qadir
 George Joseph Smalanskas
 William Patrick Smelewicz
 Marie Frances Tangney
 Robert Bruce Wilson

DOCTOR OF PHILOSOPHY

Donald Lockhart Atwell
 Raymond Francis Bogucki
 John Daniel Cushing
 Thomas Glenn Duffy
 Roland John Fuchs
 Richard Lyman Gustafson
 Dietrich Hans Heinert
 George Criton Socrates Inglessis
 James Martin Mahoney
 Joseph Mayer
 Clara Weiss Mayo

John Charles Mettler
 Arnold Miller
 Yukito Murakami
 Sonoko Ohwaki
 Nicholas Louis Onorato
 Howard Joseph Slepian
 Kayla Jaffe Springer
 Joseph Andrew Tosi, Jr.
 William Vogel
 Harland Walter Westermann
 Kaniz Fatima Yusuf

HONORARY DEGREES

Samuel Howard Miller
 Paul Wilbur Tappan
 Wernher von Braun

Doctor of Letters
 Doctor of Laws
 Doctor of Science

SUMMARY FOR 1959

<i>Degrees in Course</i>		<i>Honorary Degrees</i>	
Bachelor of Arts	122	Doctor of Letters	1
Bachelor of Business Administration	33	Doctor of Laws	1
Bachelor of Science in Business Administration (Evening College)	2	Doctor of Science	1
Bachelor of Science in General Studies (Evening College)	5		
Master of Arts	38		
Master of Arts in Education	17		
Doctor of Philosophy	22		

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CLARK UNIVERSITY

Sixty-ninth Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 7, 1959



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Suite Breve

Langlais

Processional

Invocation

THE REVEREND SAMUEL HOWARD MILLER
Dean-elect, Harvard Divinity School

Welcome by the President

DR. HOWARD BONAR JEFFERSON

Commencement Address

DR. WERNHER VON BRAUN
Director, Development Operations Division,
Army Ballistic Missile Agency,
Redstone Arsenal, Alabama

Conferring of Degrees

Benediction

THE REVEREND SAMUEL HOWARD MILLER

Recessional

*The audience will kindly remain
standing during the Recessional*

Organist: Henry Hokans

**Candidate for the Degree of Bachelor of Science
in Business Administration**

Henry Walter Bowden

**Candidate for the Degree of Bachelor of Science
in Business Administration with Honors**

Magna Cum Laude

Leo Oliver Aho

**Candidates for the Degree of Bachelor of Science
in General Studies**

Mary Fallon Hagstrom Regina Mary Haring
Aldona Patricia Lukshis

**Candidates for the Degree of Bachelor of Science
in General Studies with Honors**

Magna Cum Laude

Robert Kenneth McKenzie

Summa Cum Laude

Ernest Charles Krag

**Candidates for the Degree of Bachelor of Business
Administration**

Ralph William Anderson, Jr.	Frederick Ernest Klutey, Jr.
Albert Armando Bisceglia	Richard Einar Lindgren
*Raymond Joseph Brassard	Robert Earl Lockhart
Frank William Cain	*David Lee Meadows
John William Cashman	Theodore Michael Nikitas
Charles Roland Cooke	Andrew Louis Philip
Norman Charles Crane	Donald Brian Razansky
Richard Steven Denardo	Joseph Anthony Scopelliti
Roland Edmond Garipey	Warren Harold Simon
Lawrence Robert Goldman	Sam Vangel Sotir
Robert Joseph Ham	Arne Eric Strandberg, Jr.
Harvey Hartley Hartleb	Clark Bernard Sundin, Jr.
Edward Holdsworth Hasty, Jr.	*Philip Edward Walker
*Stephen Frank Jablonski, Jr.	Richard Stanley Wilson
Philip Fritz Johnson	Kenneth Carlson Zaramba

**Candidates for the Degree of Bachelor of Business
Administration with Honors**

Departmental Honors

Thomas Henry Higgins
Cornelius Francis Walsh

Magna Cum Laude

Theodore Norman Ulmond MacRae, *and with Highest Honors in Business Administration*

* As of June 8, 1958

Candidates for the Degree of Bachelor of Arts

Elaine Sima Adelson
 Thomas Lewis Aldis
 Audrey Mary Aslanian
 Rosalind Francine Barker
 Norman Arthur Bouffard
 Joan Audrey Brodsky
 Louis Joseph Buscone, Jr.
 Chung Hwa Cha
 Carole Elaine Chase
 Peter Robert Christopher
 Sherman Bernard Civen
 Ernest Rocco DeProspero, Jr.
 Frank James DiStefano, Jr.
 Frederick Francis Dunford
 Peter John Elefterakis
 Bernard Lewis Faber
 Ronald Everett Flodman
 Robert John Foley
 Stuart David Friedman
 George Henry Gay, Jr.
 Clare Eileen Geronimo
 Paul Gertler
 Robert Bruce Gillies
 Bertram Glanzman
 Esther Susan Goldberg
 Conrad Walfred Hagstrom
 Nancy Ellen Harris
 Wanda Joanna Hutchinson
 Kenneth Warner Jackson
 Walter Bernard Johnson
 Barry Steven Josephs
 Leslie Josephy
 Henry Jungmann
 Knarig Pauline Kaloosdian
 Paul Wayne Kane
 Ruth Margaret Katz
 John Joseph Keating
 Virginia Kimball
 Edwin Ellis Kinell
 Kay Frances Langley
 Janine Anne Leboeuf
 Francine Levy
 Mary Jane Lingis
 Gerald Mansfield Lowney
 Ronal Cyril Madnick

Patricia Ann Maloney
 Geraldine Markun
 Robert Messing
 Paul Alfred Michaud
 Mary Ellen Miller
 Susan Peckham Miller
 Robert Arnold Mitchell
 *Wilfred William Morin, Jr.
 Barbara Anne Morrow
 David Nathan
 *George Bradford Oickle
 Robert Nils Olund
 *William Francis O'Toole
 Nancy Richardson Pearson
 John Sturtevant Pierce
 Ethel Jean Potash
 Russell George Press, Jr.
 Ruth Ann Raila
 Elliot Raphaelson
 James Alfred Reilly
 *Idrian Navarre Resnick
 *Taye Reta
 Brendon William Richards
 Richard Ernest Robidoux
 Betty Ann Robinson
 Dale Lawrence Rockwell
 William Francis Rogers
 Angelo Ralph Scola
 Keith Gaskin Sears
 *Michael Silver
 Betty Ann Snyder
 Marc Herbert Speiser
 Carol Elizabeth Stanick
 Harold Charles Stein
 Lloyd Bernard Steinberg
 George Bernard Strumpf
 *Sang Chul Suh
 Michael Vincent Sullivan
 Phyllis Sally Toder
 George John Tuppa
 Anastasia Vaitiekaitis
 Mary Barbara Vardzal
 Peter Frank Vogel
 Alan John Wabrek
 George Frederick Young

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

Jay Richard Aronson, *Economics*
Bryan Albert Bailey, *Economics*
Lillian Blanche Boliver, *International Relations*
Edward Werner Cook, Jr., *Chemistry*
Albra Louise Magoon, *Sociology*
Marcos Yacoub Namuj, *Economics*
Roy Chester Willey, *Geography*
Jeanne Demetra Xanthakos, *English*

Cum Laude

Alice Solveig Ahlstrom
John Brodsky
Carl John Cedargren, Jr.
Cynthia Ellen Chase
Patricia Anne Cundall
Carl John Erickson
Martin Reinke Hackendorf, *and with Highest Honors in Chemistry*
Carol Ann Hallberg
Colby Ray Hatfield, Jr.
Roger Eugene Kasperson, *and with Honors in Geography*
Judith Libby Klein
Robert Edward Lundstrom, *and with High Honors in Chemistry*
Gwendolyn Irene Melville, *and with Honors in Government*
Barbara Louise Slyder
*Claude Alain Stark
Leonard Baruch Weiner
Janet Pierce Zanon

Magna Cum Laude

Jane Alice Akerlund, *and with Highest Honors in Chemistry*
Abraham Sidney Flexer
Sallyann Kontio
Ann Lee Loewus
Estelle Betty Schwartz
Gerald Howard Zarr, *and with High Honors in International Relations*

Summa Cum Laude

Helmut Wallenfels, *and with Highest Honors in Government*

Candidates for the Degree of Master of Arts in Education

Theresa Gertrude Babbidge	John Joseph O'Neil
Joyce Ann Baker	Margaret Jocoy Pearson
✓ Charles Edward Burner	Spencer Romeyn Potter
✓ Faye Elizabeth Crandall	Mahboob Jahan Qadir
✓ Hermon Lloyd Douce	George Joseph Smalanskas
✓ Doris Geraldine Guertin	William Patrick Smelewicz
✓ Andrew Kalinick	✓ Marie Frances Tangney
✓ Lawrence Berchmans Mullaney	Robert Bruce Wilson
✓ Marjorie Louise Olson	

* As of June 8, 1958

Candidates for the Degree of Master of Arts

Biology

- ✓ Roberta Louise Davis
- ✓ William Albert Hutchinson
- ✓ Allan Kupferman

Chemistry

- ✓ George Edward Mont

Economics and Sociology

- ✓ George Khalil Kardouche
- Chung Yum Kim
- Donald Anthony King
- Sang Chul Suh

Geography

- ✓ Nidia Avila
- Marcia Davidson Erickson
- ✓ Richard Bruce Erickson
- ✓ Jon Arthur Glasgow
- ✓ Loren Nelson Gould
- Elisabeth Cornelia Huka
- ✓ Gilbert James Hunter
- ✓ Maartini Karno
- ✓ William Alvin Koelsch
- Rajnikorn Kunawat
- Arthur Calderwood Lord, Jr.
- Pauline Ellen Riordan
- I Made Sandy
- Robert James Sullivan
- Nadirsjah H. A. Zaini

History, Government, and International Relations

- ✓ Samuel Earl Allen, Jr.
- John Paul Clark
- John Anthony Doon, Jr.
- Robert William Goss
- ✓ Sang Kyong Kim
- Ann Louise Leger

Mathematics

- Robert Norman Desmarais

Psychology

- ✓ Inge Komers Broverman
- Joseph Arthur Glick
- Anton Gysberti Hardy, Jr.
- ✓ Ogretta Ann Humphries
- ✓ Jonas Langer
- Stephen Tash Margulis
- ✓ Peter Harkai Schiller
- ✓ John Francis Walsh

Candidates for the Degree of Doctor of Philosophy

Chemistry

- Raymond Francis Bogucki
- Richard Lyman Gustafson
- Dietrich Hans Heinert
- George Criton Socrates Inglessis
- Yukito Murakami

Economics and Sociology

- John Charles Mettler
- Nicholas Louis Onorato

Geography

- Donald Lockhart Atwell
- Roland John Fuchs
- Joseph Andrew Tosi, Jr.
- Harland Walter Westermann
- Kaniz Fatima Yusuf

History, Government, and International Relations

- John Daniel Cushing
- Thomas Glenn Duffy
- James Martin Mahoney

Psychology

- Joseph Mayer
- Clara Weiss Mayo
- Arnold Miller
- Sonoko Ohwaki
- Howard Joseph Slepian
- Kayla Jaffe Springer
- William Vogel

Conferring of Honorary Degrees

SAMUEL HOWARD MILLER

Doctor of Letters

Presented by Sherman Strong Hayden

PAUL WILBUR TAPPAN

Doctor of Laws

Presented by Frederick William Killian

WERNHER VON BRAUN

Doctor of Science

Presented by Percy Martin Roope

THE LORING DODD PRIZE IN DRAMA

Shared by

Rose Mandell Fisher

Arthur Samuel Koki

THE PRENTISS CHENEY HOYT PRIZE IN POETRY

First Prize: Robert Kenneth McKenzie

Second Prize: Dona Rose Luongo

THE HOMER P. LITTLE AWARD IN GEOLOGY

Martha Jean Ingraham

THE SANFORD MEMORIAL SCHOLARSHIP

Mann Que Rho

Clark University
WORCESTER 10, MASSACHUSETTS

1959

***SUMMER
SCHOOL***

Interession

June 8 to June 27

Summer Session

June 29 to August 14

**CLARK UNIVERSITY BULLETIN
WORCESTER 10, MASS.**

CALENDAR

JUNE

- 8 Monday, *Intersession Registration* 9-12 noon
First class meeting 2 P.M.
- 24 Wednesday, Registration for evening classes
- 27 Saturday, Examinations for Intersession courses 9-12 noon
- 29 Monday, *Summer Session Registration* for day classes 9-12 noon
Evening classes begin 6 P.M.
- 30 Tuesday, Day classes begin 8 A.M.

JULY

- 21 Tuesday, Examinations in double courses concluding after first three weeks
- 22 Wednesday, Beginning of double courses of second three weeks

AUGUST

- 11 Tuesday, No classes
- 12 Wednesday, Examinations for classes meeting at 8 A.M.—9 to 12 noon
for evening classes meeting at 6 P.M.—7 to 10 P.M.
- 13 Thursday, Examinations for classes meeting at 9:15 A.M.—9 to 12 noon
- 14 Friday, Examinations for classes meeting at 10:30 A.M.—9 to 12 noon
for classes meeting at 11:45 A.M.—2 to 5 P.M.
for evening classes meeting at 8 P.M.—7 to 10 P.M.

1959

JUNE						
S	M	T	W	T	F	S
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14	15	16	17	18	19	20
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28	29	30				

JULY						
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19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST						
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30	31					

Clark University

SUMMER SCHOOL

Worcester, Massachusetts

Intersession, June 8 to June 27

Summer Session, June 29 to August 14

1959

Officers of Administration

HOWARD B. JEFFERSON, *President of the University*

ROBERT M. HYDE, *Vice President of the University*

ROGER C. VAN TASSEL, *Director of the Summer School*

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular.

Active participation by the students in class discussions is encouraged. In addition to regular courses, the whole Summer School is invited to attend the weekly punch party lecture-discussions, where a faculty member or a visitor discusses some topic of general interest.

SPECIAL PROGRAMS

Many students attend the Clark University summer sessions to accelerate their degree work. In this summer's offerings there are some special programs of interest. A Summer Institute for Mathematics Teachers in Secondary Schools and Junior Colleges has been established at Clark University for 1959 by the National Science Foundation. The Institute begins June 29 and ends August 14, 1959 and will be conducted by the Department of Mathematics. The Institute, planned for a total of sixty participants, has the principal aim of strengthening the mathematics background and professional competence of selected teachers. Thirty of the participants will be teachers in secondary schools and thirty teachers in junior colleges.

There is a wide variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have summer jobs and wish to attend school at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library which employs the open shelf system with an opportunity for unlimited browsing of the large and

varied collection of modern books, professional periodicals and an unusually large map collection. The unusually fine tennis courts will be available for use by Summer School students.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Science in Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the Staff other than those listed in the Summer School Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, statistics and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 A.M. and at 2:00 P.M., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge, and application for it should be made in the Summer School office. There is a \$1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$85.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period.

Students who attend not more than three days of classes in either the Interession or Summer Session and are forced to withdraw with just cause, may receive a refund of their tuition on applying in writing to the Director of the Summer School. Students of the Summer Session who are forced to leave before the beginning of the second week may expect a refund of two-thirds of their tuition, those who leave before the beginning of the third week may have one-third of their tuition refunded. Students leaving after the beginning of the third week of classes are not entitled to any refund.

Students leaving after the third day of classes are required to fill out a withdrawal form.

LIVING FACILITIES AND COSTS

Dormitory facilities for both men and women are available but reservations should be made promptly on or before June 1. Room rent is \$10.00 per week for single room occupancy and \$7.50 for double. A room and key deposit of \$10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The \$10.00 will be returned in full if the room is undamaged when the key is returned. The University Dining Hall will be open for breakfast and luncheon.

VETERANS

Veterans attending the 1959 Summer School should present their supplemental Certificate of Eligibility at the Veteran's window in the Bur-

sar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

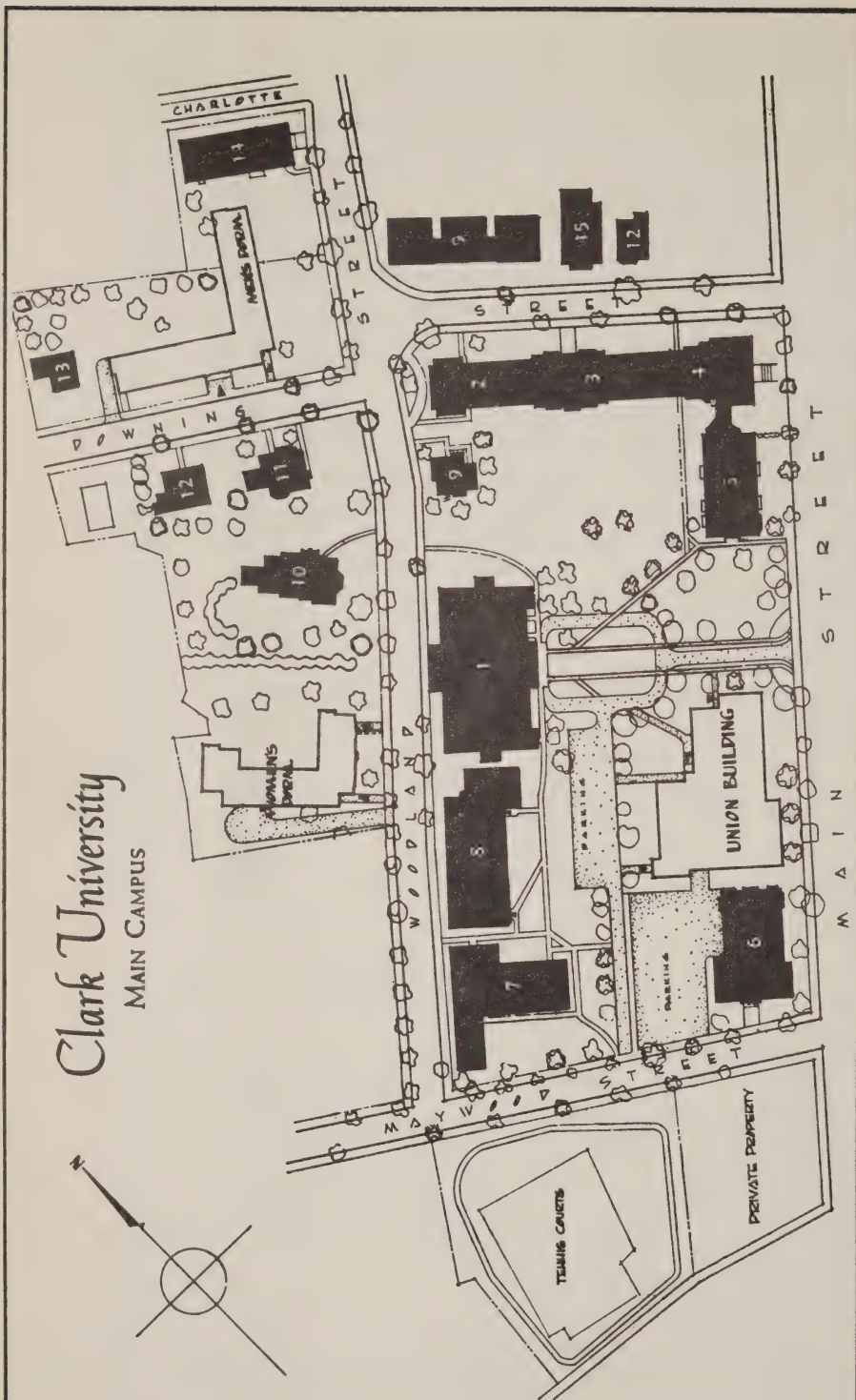
Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1959 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

Clark University

MAIN CAMPUS



1. Jonas Clark Hall
2. Alwood Hall
3. Library Tower
4. Library

5. Geography School
6. Alumni Gymnasium
7. Chemistry-Physics
8. Jeppson Laboratory

9. Women's Dormitories
10. President's Home
11. Dean's Home
12. Faculty Houses

13. Student Union
14. Estabrook Hall
15. Infirmary

- Under Construction
- Men's Dormitory
- Women's Dormitory
- Union Building

COURSE OFFERINGS

Biology

Intersession

F.—BIO.—S.17 GENERAL ECOLOGY

Rudolph F. Nunnemacher, *Professor of Biology*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, lakes and streams. Shorter field trips to Mt. Monadnock, the virgin forest at Bradford, N. H., the North Shore, and the Barnstable Dunes on Cape Cod will be taken during the week. It is hoped that a longer trip of several days can be arranged for a weekend so that the White Mountains and northern coniferous forests might be included. Some field work at a fresh-water lake will also be undertaken. Expenses for the field camp and extended trip are only partially included in the laboratory fee. Previous courses in Biology are helpful but not required.

Laboratory fee \$10.00

Mon. through Fri. at 9:00 and 2:00

Clark Hall 206

Field Trips to be arranged.

Summer Session

F.—BIO.—S.11a GENERAL BIOLOGY—THE PLANT KINGDOM

Wm. Hutchinson ~~To be announced~~

Introduction to the fundamentals of biology as illustrated by the plant kingdom will cover such questions as: evolution, inter-relationships; growth, and distribution of plants and their reaction to the environment. Field work may be included.

Laboratory fee \$10.00

Mon through Fri., 8:00-9:10 A.M.

Clark Hall 206

Lecture-Laboratory: Tues. and Thurs., 1:00-4:00 P.M.

BIO.—S.130 AN INTRODUCTION TO MICROBIOLOGY

John T. Reynolds, *Assistant Professor of Biology*

An introduction to some of the problems, phenomena and relationships encountered in the study of micro-organisms. Emphasis will be given to the bacteria, yeasts, molds and viruses. No attempt will be made to develop competence in laboratory techniques.

Clark Hall 207

Mon., Wed. and Fri., 6:00-7:50 P.M.

BIO.—S.262 INSTRUMENTAL PROCEDURES IN BIOLOGICAL INVESTIGATIONS

Harris Rosenkrantz, *Research Associate
Worcester Foundation for Experimental Biology*

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy will be carried out. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry, and radioactive tracers.

Laboratory fee \$10.00

Lectures Mon. through Thurs. 8:00-9:10 A.M.

Clark Hall 207

Laboratory Fri. 8:00-12:00 Noon

BIO.—S.370 RESEARCH IN BIOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Business Administration*Summer Session****B.A.—S.16 BUSINESS STATISTICS**

George E. Hargest, *Associate Professor of Business Administration*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises.

Clark Hall 217 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

F.—B.A.—S.17 PUBLIC SPEAKING

Herbert R. Haber, *Instructor in English*

For course description see section on English.

(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 106 Mon., Wed. and Fri., 8:00–9:50 P.M.

F.—B.A.—S.150a PRINCIPLES OF MARKETING

George A. Balko, Jr., *Assistant Professor of Business Administration*

The efficiency, social implications, and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer.

Clark Hall 215 Mon., Wed. and Fri., 6:00–7:50 P.M.

B.A.—S.184 MANAGEMENT–LABOR RELATIONS

F. Eugene Melder, *Professor of Economics*

The subject matter of the course is management-employee relationships with special reference to union and management bargaining, shop industrial situations and the law of labor relations. Discussion and case methods are employed.

Clark Hall 217 Mon. through Fri., 10:30–11:40 A.M.

B.A.—S.225b MARKETING POLICIES

George A. Balko, Jr., *Assistant Professor of Business Administration*

An analysis of how such forces as competition, demand, cost, distribution structure, and legislation affect marketing decisions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion, and prices.

Clark Hall 215 Mon., through Fri., 8:00–9:10 A.M.

*Double Course, two classes daily, through summer session.

Economics

Interession

EC.—S.13 MONEY AND BANKING

James A. Maxwell, *Professor of Economics*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Clark Hall 218

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

EC.—S.140b CONSUMER ECONOMICS

F. Eugene Melder, *Professor of Economics*

Consumers' roles in a market economy and their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private noncommercial agencies, the government, and the cooperative movement.

Clark Hall 215

Mon. through Fri., 9:15–10:25 A.M.

EC.—S.28 RESEARCH IN ECONOMIC PROBLEMS

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Education

Summer Session

ED.—S.201B EDUCATIONAL PSYCHOLOGY

Vernon Jones, *Professor of Educational Psychology*

A study of the psychological principles of learning and teaching in the schools. Attention will be given to maturation and learning as they relate to emotional, social, and intellectual development. The problem of individual differences and the early identification of special abilities will receive attention. Procedures will include class discussion, readings, and attention to individual teaching problems upon which the students of the class may desire assistance.

Clark Hall 303

Mon. through Fri., 9:15–10:25 A.M.

ED.—S.209a TEACHING OF SOCIAL STUDIES

Henry C. Borger, Jr., *Associate Professor of Education*

Objectives, methods and materials used in the teaching of the social studies in the elementary and secondary schools.

Clark Hall 209

Mon. through Fri., 8:00–9:10 A.M.

ED.—S.225 A DEMONSTRATION IN METHODS AND MATERIALS IN TEACHING

Henry C. Borger, Jr., *Associate Professor of Education*

A series of carefully planned and evaluated experiences in the observation of children's activities utilizing modern methods and materials in an actual classroom situation. Attention will be given to several methods of approach particularly the unit. Observation of the dynamic classroom in action will enable the student to acquire first-hand

knowledge of the nature and needs of the growing child on the junior high school level. Application will be made to elementary and high school teaching. Although essentially a demonstration experience, the course will include the theory behind the practice that is observed.

Clark Hall 209

Mon. through Fri., 10:30–11:40 A.M.

ED.—S.229 GROUP EVALUATION AND GUIDANCE

Vernon Jones, *Professor of Educational Psychology*

This course is designed (1) to cover the main principles and techniques of group measurement and evaluation basic to guidance in school, and (2) to provide demonstrations and practice in the use of measurement data in educational and vocational guidance. Some of the chief principles and problems of individual and group guidance will be considered. Members of the class will be provided opportunities to obtain practice in test interpretation and in planning for guidance and counseling.

Clark Hall 303

Mon. through Fri., 11:45 A.M.–12:55 P.M.

ED.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

An examination of aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Clark Hall 106

Mon. through Fri., 9:15–10:25 A.M.

English

Interession

F.—ENG.—S.11a ENGLISH COMPOSITION AND LITERATURE

Karl O. E. Anderson, *Associate Professor of English*

The purpose of English 11 is to develop clarity and accuracy in reading and writing. After a short review of the principles of rhetoric, the course will be devoted to the study of expository essays and short stories. Themes and individual conferences. This course, together with English 11b, is a requirement for the Clark A.B.

Clark Hall 301

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

ENG.—S.125 THE SHORT STORY

William H Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Clark Hall 212

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—ENG.—S.11b ENGLISH COMPOSITION AND LITERATURE

Jessie C. Cunningham, *Instructor in English*

This second half of the year course aims to help the student develop sound critical principles in evaluating fiction and poetry.

Clark Hall 106

Mon. through Fri., 10:30–11:40 A.M.

F.—ENG.—S.12 PUBLIC SPEAKING

Herbert R. Haber, *Instructor in English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conference, and voice recordings to enable the student to recognize and correct his speech deficiencies.

(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12)

Clark Hall 106

Mon., Wed. and Fri., 8:00–9:50 P.M.

ENG.—S.106 CONTEMPORARY AMERICAN FICTION

Herbert R. Haber, *Instructor in English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, and others.

Clark Hall 106

Mon., Wed. and Fri., 6:00–7:50 P.M.

ENG.—S.142b THE ENGLISH NOVEL THROUGH HARDY

Jessie C. Cunningham, *Instructor in English*

A study of the development of the English novel from its origin to the latter half of the nineteenth century, with detailed reading of works of Nashe, Defoe, Richardson, Fielding, Walpole, Smollett, Beckford, Austen, Scott, Eliot, Dickens, and Hardy.

Clark Hall 106

Mon. through Fri., 11:45 A.M.–12.55 P.M.

Fine Arts

Interession

F.—F.A.—S.12 INTRODUCTION TO MUSIC

Relly I. Raffman, *Assistant Professor of Music*

What to listen for in Music. Designed for the student with no previous musical training or experience, it will deal with the basic theoretical elements and materials of music.

Atwood Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.A.—S.195 INTRODUCTION TO CONTEMPORARY ART

Sante Graziani, *Associate Professor (Affiliate) of Fine Arts*

Head of School, Worcester Art Museum

Study of basic ways and means for forming and understanding contemporary works in art and design. Illustrated lectures and criticisms of experiments done with simple materials in black and white and in color. Work in line, shape, patterns, volume, color, and space in drawing and painting. No previous formal training is required for the beginner. A review of fundamental ideas for the advanced student and professional worker in the field of advertising and industrial design, and teaching. Satisfies Fine Arts requirement.

Atwood Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

Geography

Interession

Geo. S.28a PHYSICAL GEOGRAPHY OF NEW ENGLAND

Richard J. Lougee, *Professor of Geomorphology*

A field and lecture course on the physical and historical background of New England geography, with special emphasis on Worcester. Occasional field trips will be arranged.

Geography Bldg.; Lecture Room

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—GEO.—S.191—CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.

Geography Bldg.,

Mon. through Fri., 1:30 P.M. and afternoon workshop

Cartography Lab.

GEO.—S.291 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

Similar course to S.191 with additional work required for graduate credit.

Geography Bldg.,

Mon. through Fri., 1:30 P.M. and afternoon workshop

Cartography Lab.

GEO.—S.300 RESEARCH IN GEOGRAPHY

Graduate research studies may be carried out under direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

History and Government

Interession

HIST.—S.130a POLITICAL HISTORY OF THE UNITED STATES

Gerald N. Grob, *Instructor, American History*

A study of the historical development of the Presidency, Congress, the Supreme Court and the Party System since the adoption of the Constitution, together with an examination of the outstanding personalities and issues in American political life from Washington to Eisenhower. Lectures will be supplemented by individual reports and discussion.

Clark Hall 220

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

HIST.—S.221a ENGLAND IN THE TWENTIETH CENTURY

H. Donaldson Jordan, *Professor of English History*

The development of the United Kingdom from the time of its greatest power to the present struggle to maintain a world position.

Clark Hall 209

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

HIST.—S.230b SOCIAL AND INTELLECTUAL HISTORY OF THE UNITED STATES

Gerald N. Grob, *Instructor, American History*

This course will deal with the main currents in American thought and the development of social and intellectual institutions from the Civil War to the present.

Clark Hall 220

Mon., Wed. and Fri., 8:00–9:50 P.M.

HIST.—S.236 THE AMERICAN REVOLUTION, 1763–1789

George H. Merriam, *Lecturer, Clark Evening College*

The course is planned to cover in careful detail the growth of revolutionary opinion in the British colonies from the end of the Seven Years war to 1775, to describe the actual happenings of the Revolutionary War in some detail, with more attention given to the philosophical background of this period, and to show the reaction from revolution which came to fruition in the adoption of the Federal Constitution.

Clark Hall 220

Mon. through Fri., 8:00–9:10 A.M.

GOV.—S.251a AMERICAN POLITICAL PARTIES

Morris H. Cohen, *Associate Professor of Government*

A study of the functioning of American party organizations, pressure groups, and the electorate in American politics. Emphasis is placed upon current problems and trends in the field.

Clark Hall 302

Mon. through Fri., 9:15–10:25 A.M.

GOV. S.255 THE CONSTITUTION AND CIVIL RIGHTS

Morris H. Cohen, *Associate Professor of Government*

An analysis of recent problems in the field of civil liberties including among others: freedom of speech, press and religion, civil rights and the administration of justice, congressional investigations, and the guarantee of equal protection of the law—desegregation problems. The course is conducted primarily via analysis of Supreme Court decisions and will emphasize the case study method rather than lectures.

Clark Hall 302

Mon. through Fri., 10:30–11:40 A.M.

GOV.—S.300 READING AND RESEARCH IN HISTORY AND GOVERNMENT
HIST.—S.300

Reading or thesis courses for graduate students to be arranged with staff members.

LANGUAGES

Intersession

F.—FR.—S.10 ELEMENTARY FRENCH REFRESHER

J. Richard Reid, *Professor of Romance Languages*

An intensive course in which the student will spend three weeks studying, practicing, speaking and reading French. The class will meet for three 50 minute periods each day, attendance being required at all classes, with laboratory work in pronunciation between class meetings. French table at lunch. Classes will meet at 8:00 to 8:50 (Reading), 10:50 to 11:40 (Grammar), 2:00 to 2:50 (Pronunciation and Conversation). The course is recommended as a refresher for out-of-practice French students before taking Intermediate French and as a substitute for second half of French 11 at Clark thus validating credit for the first half. Auditors are welcome on condition that they participate fully in the course. Limited to 14 students.

Clark Hall 106

Mon. through Fri., 8:00 and 10:50 A.M.; 2:00 P.M.

Summer Session

*F.—FR.—S.12 INTERMEDIATE FRENCH

Staff

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily for affording insights into the culture of France. Open to

students who have had the elements of French in a first-year college course or the equivalent. Indivisible course.

Clark Hall 104

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

***FR.—S.14 READINGS IN FRENCH LITERATURE**

Staff

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent.

Library

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

German

***F.—GER.—S.11 INTRODUCTORY GERMAN**

Karl J. Arndt, *Professor of German*

The regular material of the first year of college is covered: pronunciation, basic vocabulary, elements of grammar, composition, and reading of suitable German prose. An intensive course for students interested in devoting full time and complete attention to the study of German during the summer session.

Clark Hall 304

Mon. through Fri., 8:00 and 11:45 A.M.

***F.—GER.—S.12 INTERMEDIATE GERMAN**

James S. Edwards, *Associate Professor of German*

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested.

Clark Hall 308

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Spanish

***F—SP.—S.11 INTRODUCTORY SPANISH**

Raymond E. Barbera, *Assistant Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.

Clark Hall 220

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Mathematics

Summer Session

MATH.—S.201 FUNDAMENTAL CONCEPTS OF MATHEMATICS

John S. Stubbe, *Associate Professor of Mathematics*

Seymour Hayden, *Assistant Professor of Mathematics*

The following topics are included in the course: deductive logic, the number system, the algebra of sets, basic concepts of analytic geometry, function, cardinal number and the limit process. Course S.201 is chiefly for the Summer Institute for High School Teachers. Not more than five persons other than members of the Institute may enter the course and permission of the Director of the Institute must be secured. Double course, 6 hours of credit, undergraduate or credit toward M.A. in Ed.

Clark Hall

Mon. through Fri., 9:15 A.M. and 10:45 A.M.

***Double Course, two classes daily, through summer session**

MATH.—S.221a MODERN ALGEBRA

E H. Batho, *Assistant Professor of Mathematics, University of Rochester*

Development of various algebraic systems; groups, rings, integral domains and fields. Emphasis will be placed on the nature of mathematical proof. 3 hours of credit. Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured.

Clark Hall 305

Mon. through Fri., Section A 9:15 A.M.
Section B 10:45 A.M.

MATH.—S.221b—FOUNDATIONS OF GEOMETRY

W. T. Fishback, *Associate Professor of Mathematics, Ohio University*

Systems of postulates for projective, affine, Euclidean and non-Euclidean geometries. Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured. 3 hours of credit.

Clark Hall 212

Mon. through Fri., Section A 9:15 A.M.
Section B 10:45 A.M.

Philosophy

Intersession

PHIL.—S.15a INTRODUCTION TO PHILOSOPHY OF RELIGION

Geoffrey Clive, *Assistant Professor of Philosophy*

Perennial themes such as the nature of man, the existence of God, literalism versus imagination, and the meaning of providence in history. Readings focused on classics of the Judaeo-Christian tradition with a fair selection from twentieth-century existential and analytic writers.

Clark Hall 303

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

PHIL.—S.119 BASIC ISSUES IN PHILOSOPHY

Robert N. Beck, *Associate Professor of Philosophy*

Reading and discussion of materials concerned with some of the fundamental and recurring problems in philosophy. Subject for 1959: the idea of freedom in its ethical, aesthetic, political, scientific, religious, and metaphysical dimensions.

Clark Hall 106

Mon. through Fri., 8:00–9:10 A.M.

PHIL.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

The course description is given under Education.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M.

Psychology

Intersession

F.—PSY.—S.11a GENERAL PSYCHOLOGY

Peter E. Comalli, Jr., *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Clark Hall 304

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

PSY.—S.103b THE ABNORMAL PERSONALITY

Morton Wiener, *Associate Professor of Psychology*

The course will be devoted to a study of the development of the abnormal personality and a survey of the major types of abnormal behavior.

Clark Hall 320

Mon. through Fri., 9:15–10:25 A.M.

PSY.—S.172a PERSONALITY DEVELOPMENT

Robert W. Baker, *Associate Professor of Psychology*

A survey of the various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

Clark Hall 301

Mon. through Fri., 8:00–9:10 A.M.

PSY.—S.150a INTRODUCTION TO CHILD PSYCHOLOGY

Joachim F. Wohlwill, *Assistant Professor of Psychology*

This course will consider the normal process of development of the child from infancy up to adolescence, with emphasis on perception, thinking, emotion, and social behavior.

Clark Hall 320

Mon., Wed. and Fri., 8:00–9:50 P.M.

PSY.—S.350 RESEARCH IN PSYCHOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Sociology*Summer Session*

SOC.—S.11a PRINCIPLES OF SOCIOLOGY

Frederick W. Killian, *Associate Professor of Sociology*

This is an introductory course in understanding the society in which we live. How this system of customs, conventions, relationships has begun, grown and developed. It is a study of the framework of order and of institutions in which we find our needs and satisfactions and in which we relate to other people through status, playing roles, moving towards goals and interests. It is a study of the relationships between these goals, interests, values and conventions. This course stresses the elementary concepts of the field based on a comprehensive text and upon discussion.

Clark Hall 215

Mon. through Fri., 10:30–11:40 A.M.

SOC.—S.12a INTRODUCTION TO CULTURAL ANTHROPOLOGY

Frederick W. Killian, *Associate Professor of Sociology*

The evolution and development of man and his culture; basic concepts; the races of man and their distribution; processes of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

Clark Hall 215

Mon. through Fri., 11:45 A.M.–12:55 P.M.

COURSES OFFERED

BIOLOGY

3.11a	General Biology	8:00 A.M.	To be announced
3.17	General Ecology	Interession	Nunnemacher
3.130	An Introduction to Microbiology	6:00 P.M.	Reynolds
3.262	Instrumental Procedures in Biological Investigations	8:00 A.M.	Rosenkrantz
3.370	Research in Biology		Staff

BUSINESS ADMINISTRATION

3.16	Business Statistics (Double Course)	9:15 A.M., 2:00 P.M.	Hargest
3.17	Public Speaking	8:00 P.M.	Haber
3.150a	Principles of Marketing	6:00 P.M.	Balko
3.184	Management-Labor Relations	10:30 A.M.	Melder
3.255b	Marketing Policies	8:00 A.M.	Balko

ECONOMICS

3.13	Money and Banking	Interession	Maxwell
3.140b	Consumer Economics	9:15 A.M.	Melder
3.28	Research in Econ. Problems		Staff

EDUCATION

3.201b	Educational Psychology	9:15 A.M.	Jones
3.209a	Teaching of Social Studies	8:00 A.M.	Borger
3.225	Demonstration Teaching	10:30 A.M.	Borger
3.229	Group Evaluation and Guidance	11:45 A.M.	Jones
3.290b	Philosophy of Education	9:15 A.M.	Beck

ENGLISH

3.11a	English. Comp. and Literature	Interession	Anderson
3.11b	English. Comp. and Literature	10:30 A.M.	Cunningham
3.12	Public Speaking	8:00 P.M.	Haber
3.106	Contemporary Amer. Fiction	6:00 P.M.	Haber
3.125	The Short Story	Interession	Carter
3.142b	The English Novel through Hardy	11:45 A.M.	Cunningham

FINE ARTS

3.12	Introduction to Music	Interession	Raffman
3.195	Intro. to Contemporary Art	6:00 P.M.	Graziani

GEOGRAPHY

3.28a	Physical Geog. of New England	Interession	Lougee
3.191	Cartography (Single or Double Course)	1:30 P.M.	Burnham
3.291	Cartography (Single or Double Course)	1:30 P.M.	Burnham
3.300	Research in Geography		Staff

HISTORY AND GOVERNMENT

3.130a	Political Hist. of the U. S.	Interession	Grob
3.221a	England in the 20th Century	Interession	Jordan
3.230	Social and Intellectual Hist. of the U. S.	8:00 P.M.	Grob
3.236	American Revolution, 1763-89	8:00 A.M.	Merriam
3.251a	American Political Parties	9:15 A.M.	Cohen
3.255	Constitution and Civ. Liberties	10:30 A.M.	Cohen
	Reading and Research in Hist. and Govt.		Staff

LANGUAGES

3.10	Elementary French Refresher	Interession	Reid
3.12	Intermed. French (Double Course)	9:15 A.M., 2:00 P.M.	Staff
3.14	Read. in French Lit. " "	9:15 A.M., 2:00 P.M.	Staff
3.11	Intro. German " "	8:00 A.M., 11:45 A.M.	Arndt
3.12	Intermed. German " "	9:15 A.M., 2:00 P.M.	Edwards
3.11	Intro. Spanish " "	9:15 A.M., 2:00 P.M.	Barbera

MATHEMATICS (NSF Institute)

S.201	Fundamental Concepts of Mathematics (Double Course)	9:15 A.M., 10:45 A.M.	Hayden & Stubbe
S.221a	Modern Algebra	9:15 A.M. or 10:45 A.M.	Batho
S.221b	Foundations of Geometry	9:15 A.M. or 10:45 A.M.	Fishback

PHILOSOPHY

S.15a	Intro. to Phil. of Religion	Interession	Clive
S.119	Basic Issues in Philosophy	8:00 A.M.	Beck
S.290b	Philosophy of Education	9:15 A.M.	Beck

PSYCHOLOGY

S.11a	General Psychology	Interession	Comalli
S.103b	The Abnormal Personality	9:15 A.M.	Wiener
S.150a	Intro. to Child Psychology	8:00 P.M.	Wohlwill
S.172a	Personality Development	8:00 A.M.	Baker
S.350	Research in Psychology		Staff

SOCIOLOGY

S.11a	Principles of Sociology	10:30 A.M.	Killian
S.12a	Intro. to Cultural Anthropology	11:45 A.M.	Killian



Please send me a registration card for the 1959 Clark University Summer School so that I may preregister.

My academic status is:

College Graduate ☐ College Undergraduate ☐
Special Student ☐ Clark University Evening College ☐
(not a degree candidate)

I (have, have not) previously attended the Clark University Summer School.

NAME

ADDRESS

City Zone State

Return to

SUMMER SCHOOL OFFICE, CLARK UNIVERSITY,
950 MAIN STREET, WORCESTER, MASS.

CLARK UNIVERSITY

WORCESTER, MASSACHUSETTS



DEPARTMENT OF MATHEMATICS

1959

SUMMER INSTITUTE for High School and Junior College Teachers of Mathematics



SUPPORTED BY THE
NATIONAL SCIENCE FOUNDATION

Course for High School Teachers

Fundamental Concepts of Mathematics
(Double Course)

Courses for Junior College Teachers

Modern Algebra
Foundations of Geometry

JUNE 29 - AUGUST 14, 1959
WORCESTER, MASSACHUSETTS

INTRODUCTION

A Summer Institute for Mathematics Teachers in Secondary Schools and Junior Colleges has been established at Clark University for 1959 by the National Science Foundation. The Institute begins June 29 and ends August 14, 1959 and will be conducted by the Department of Mathematics of Clark University, Worcester, Massachusetts.

THE CHIEF AIM OF THE INSTITUTE

The chief aim of the Institute is to broaden and deepen the mathematical background and professional competence of selected teachers.

NUMBER OF PARTICIPANTS

The Institute is planned for a total of sixty participants, thirty teachers in secondary schools and thirty teachers in junior colleges.

THE COURSES

Two courses will be offered by the Institute: Course S.201 primarily for participants who teach in high schools and Course S.221 primarily for those who teach in junior colleges. A high school teacher of exceptionally good background in mathematics may be permitted to enter Course S.221 and a junior college teacher with mathematical background not so strong as it might be may be permitted to enter Course S.201. Satisfactory work done in Course S.201 will entitle a participant to six hours of credit toward a degree of Master of Education or six hours of credit toward a Bachelor of Arts degree. Satisfactory work done in Courses S.221(a) and S.221(b) will entitle the student to three hours of graduate credit toward the Master of Arts degree or Master of Education degree in each course.

A participant will attend two hours of lecture each morning, Monday through Friday. Discussion and drill sections will be held in the afternoons.

Course S.201, **Fundamental Concepts of Mathematics**, will emphasize postulational thinking and the general and abstract nature of mathematics, with the following topics included in the course: deductive logic, the number system, the algebra of sets, basic concepts of analytic geometry, the idea of function, trigonometric functions, cardinal number and some discussion of the limit process and of the foundations of geometry. It is hoped that the nature of proof will be made clear and that the participants will begin to appreciate what is meant by generality and abstraction. There will be two sections of Course S.201: Section A will meet at 9:15 o'clock and again at 10:45; Section B will meet at 9:15 o'clock and again at 10:45. Each section will have in it fifteen participants.

Course S.221. Course S.221 will have two parts, S.221(a) and S.221(b).

No. 1958-41, October 13, 1958, pp. 15-17. (Cost 20 cents. Superintendent of Documents, U.S. Printing Office, Washington 25, D.C.)

Stipend and allowances will be paid as follows: one-third of the stipend and dependency allowance will be paid on the opening day of the Institute, June 29, one-third on July 22 and one-third on August 14; travel allowances will be paid in full on or before July 15.

EXPENSE, LIVING ACCOMMODATIONS

There will be no tuition charge. A participant must pay the matriculation fee of \$5.00 charged by the University. If a participant wishes to use the tennis courts and the gymnasium he must pay an activity fee of \$3.00. A participant must purchase books and materials essential to his courses. The University Book Store is on the first floor of the main building, Jonas Clark Hall.

Rates for rooms in men's or women's dormitories are as follows: \$7.50 a week per student, double occupancy; \$10.00 a week per student, single rooms. Linen will be changed twice a week.

The University has available ten attractive apartments on the campus. These apartments have been temporarily converted for use as a women's dormitory and are not fully equipped for housekeeping, although each apartment does have a private bath and a hot-plate. There is a refrigerator on each floor for the joint use of the occupants of two apartments. An apartment of three rooms rents for \$16.00 a week, one of four rooms for \$22.00 a week.

Every participant is required to be present at luncheon in the Dining Hall of Estabrook Hall daily, Monday through Friday. He will be charged \$1.00 for luncheon, a total of \$35.00 for the term, with \$17.50 deducted from his check on June 29, and \$17.50 on July 22. Breakfast (optional) will be available at modest cost from 7:30 to 9 o'clock, Monday through Friday.

At least two instructors will live in the Men's Dormitory throughout the program and all instructors will attend the daily luncheons; their presence should contribute much to informal discussion.

In the neighborhood of Clark University there are apartments for housekeeping. The Institute will have a listing of those available and will do all that it can to help participants find acceptable living quarters.

ELIGIBILITY FOR MEMBERSHIP

The thirty high school and preparatory school teachers to be elected to membership in the Institute will be selected on the basis of mathematical training, teaching experience in high school and primarily for their ability to profit from the program of the Institute and for their capacity to develop as teachers of mathe-

matics. Any person under fifty years of age, a graduate of a four-year college, predominantly engaged in high school work, who has taught mathematics for at least three years and who is teaching at least one full course in mathematics in junior or senior high school during the year 1958-59, is eligible to apply for membership.

Thirty junior college teachers will be selected on the basis of mathematical training and junior college teaching experience. Any person who has graduated from a four-year college and is teaching courses in mathematics in a junior college during the year 1958-59 is eligible to apply for membership in the Institute. A teacher sharing time between high school and junior college will be considered to be in the institution where the majority of his mathematics teaching is carried on.

Applicants who are presently in the Armed Forces and who entered service directly from positions as mathematics teachers are eligible for stipends, other things being equal, and their being chosen will not affect adversely their educational rights as Korean Conflict veterans. They may not receive funds through the National Science Foundation and the Veterans Administration simultaneously.

Candidates whose attendance has been supported at past Institutes will be carefully investigated by the Staff in an attempt to measure their capacity to benefit from the Clark Institute.

Final selection for membership in the Institute will be made by the Director and the Staff of the Institute. Attention will be given to college scholastic record, especially in courses in mathematics. The Staff will want to see evidence that the candidate is committed to the profession of teaching.

Formal applications must be postmarked not later than February 16, 1959. Candidates will be notified of selection or rejection on or before March 16, 1959, and they must reply, accepting or rejecting selection, before April 1, 1959. A number of alternates will be chosen before March 16 and applicants so designated will be notified and given an opportunity to refuse such a classification. In the case of a rejection of an offered membership by a successful candidate, an alternate will be selected for membership and notified as soon as possible.

APPLICATION FOR MEMBERSHIP

Anyone who is eligible under the general terms outlined above may apply. Application forms should be obtained from the office of: Summer Institute for Teachers of Mathematics, Clark University, Worcester 10, Massachusetts. Completed applications should be sent **only** to Dr. Charles T. Bumer, Director, NSF Summer Institute, Clark University, Worcester 10, Massachusetts.

JUNE 8 - INTERSESSION - JUNE 27

Classes meet daily, Monday through Friday—9:00 to 10:10 AM. and 2:00 to 3:10 P.M. (Except Fr. S.10)—3 credits

Bio. S.17 General Ecology
Ec. S.13 Money and Banking
Eng. S.11a English Comp. and Literature
Eng. S.125 The Short Story
F.A. S.12 Introduction to Music
Geo. S.28a Physical Geog. of New England

Hist. S.130a Political Hist. of the U.S.
Hist. S.221a England in the Twentieth Century
Fr. S.10 Elementary French Refresher
Phil. S.15a Intro. to Philosophy of Religion
Psy. S.11a General Psychology

JUNE 29 - SUMMER SESSION - AUGUST 14

Morning Classes meet daily Monday through Friday—3 credits

8:00 to 9:10	Bio. S.11a General Biology Bio. S.262 Instrumental Procedures in Bio. Investigations Ed. S.209a Teaching of Soc. Studies	Hist. S.236 American Revolution Phil. S.119 Basic Issues in Phil.	Psy. S.172a Personality Development
9:15 to 10:25	Ec. S.140b Consumer Economics S.201b Educational Psychology Ed. S.290b Philosophy of Education	Gov. S.251a Amer. Political Parties Phil. S.290b Philosophy of Education Psy. S.103b Abnormal Personality	
10:30 to 11:40	B.A. S.184 Management-Labor Rels. Ed. S.225 Demonstration Teaching Eng. S.11b Eng. Comp. and Lit.	Gov. S.255 Const. & Civ. Liberties Soc. S.11a Introductory Sociology	
11:45 to 12:55	Ed. S.229 Group Eval. & Guidance Eng. S.142b The English Novel	Soc. S.12a Intro. to Cult. Anthropol.	

1:30 P.M. Geo. S.191 Cartography
Geo. S.291 Cartography

Evening Classes meet Monday, Wednesday and Friday—3 credits

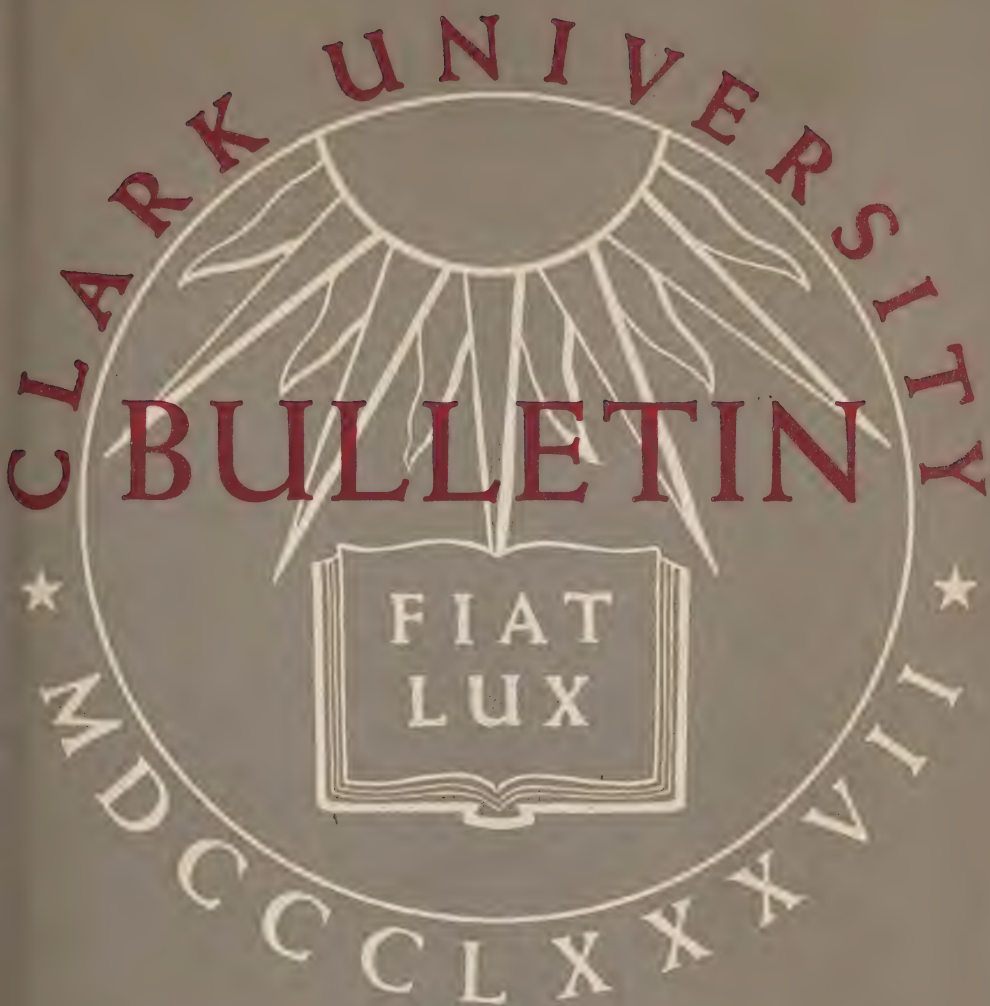
6:00 to 7:50	Bio. S.130 Intro. to Microbiology B.A. S.150a Principles of Marketing	Eng. S.106 Contemp. Amer. Fiction F.A. S.195 Intro. to Contemp. Art
8:00 to 9:50	B.A. S.17 Public Speaking Eng. S.12 Public Speaking	Hist. S.230b Soc. & Intell. Hist. of U.S. Psy. S.150a Intro. to Child Psychology

TWICE DAILY COURSES

Two Class Meetings Monday through Friday

B.A. S.16 Business Statistics	9:15 & 2:00
Math. S.201 Fundamental Concepts	9:15 & 10:45
Math. S.221a Modern Algebra	9:15 or 10:45
Math. S.221b Foundations of Geometry	9:15 or 10:45
Fr. S.12 Inter. French	9:15 & 2:00
Fr. S.14 Read. in Fr. Lit.	9:15 & 2:00
Ger. S.11 Intro. German	8:00 & 11:45
Ger. S.12 Inter. German	9:15 & 2:00
Sp. S.11 Intro. Spanish	9:15 & 2:00





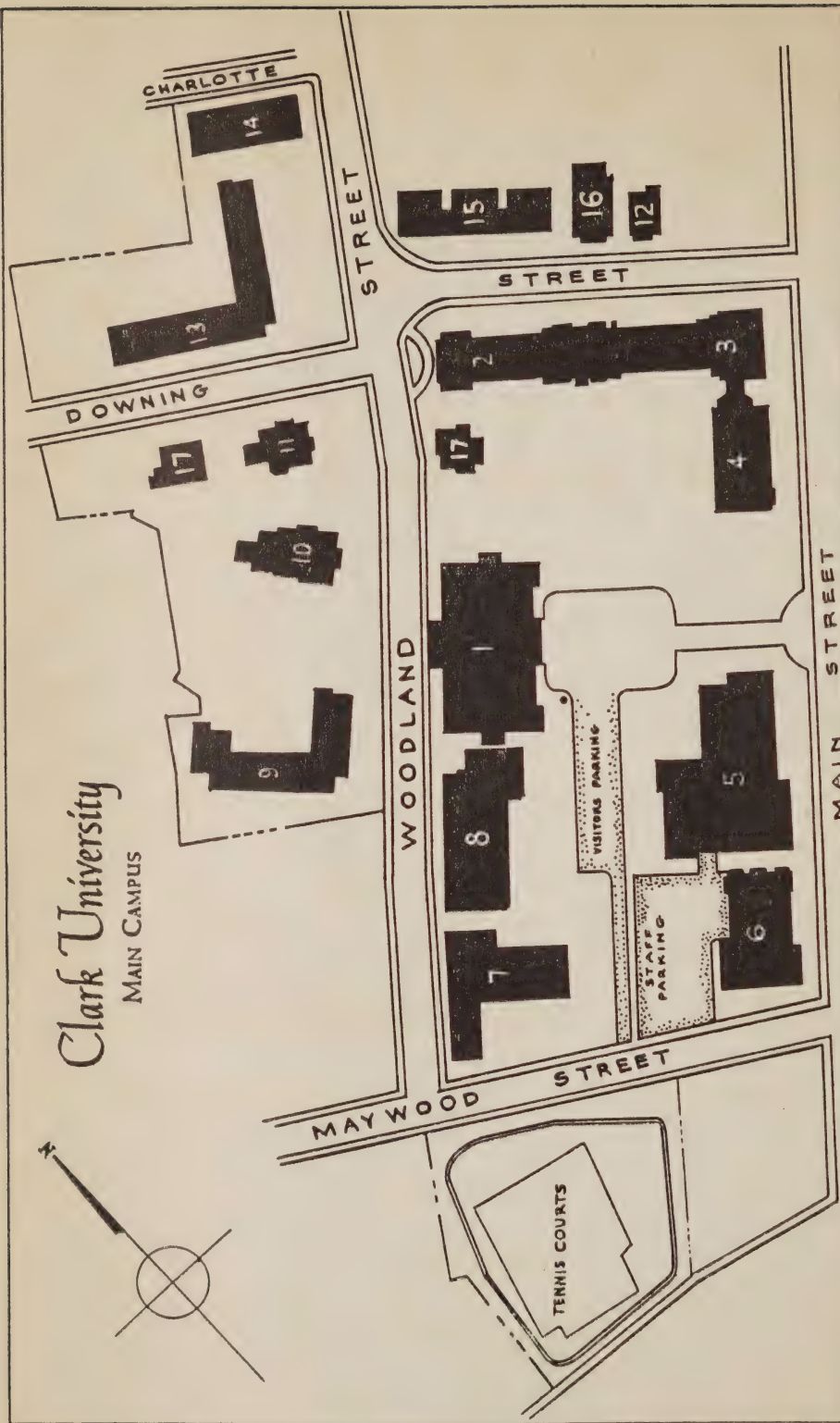
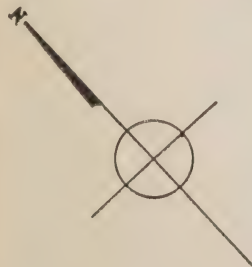
GENERAL CATALOG

1959-1960₉
1960-1961

No. 251

Clark University

MAIN CAMPUS



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|-----------------------|------------------------|----------------------|---------------------------|-------------------------|
| 1. Jonas Clark Hall | 7. Science Building | 10. President's Home | 13. Dormitory For Men | 16. Infirmary |
| 2. Atwood Hall | 8. Jeppson Laboratory | 11. Dean's Home | 14. Estabrook Hall | 17. University Building |
| 3. Library | 9. Dormitory For Women | 12. Faculty Home | 15. University Apartments | |
| 4. Geography Building | | | | |
| 5. Jefferson Hall | | | | |
| 6. Alumni Gymnasium | | | | |

Clark University

BULLETIN



GENERAL CATALOG

for the academic year 1960-61

No. 251

September, 1960

The CLARK UNIVERSITY BULLETIN is published in February, April, twice in July, twice in September, November and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: Clark University, 950 Main Street, Worcester 10, Massachusetts.

A record for the academic year 1959-60. Announcements for the academic year 1960-61 which can be made at the time of publication are included.

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JULY							AUGUST							SEPTEMBER						
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2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31
30	31																			
							1961													
JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7			1	2	3	4				1	2	3	4	
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25
29	30	31					26	27	28					26	27	28	29	30	31	
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1		1	2	3	4	5	6					1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	
30																				
JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1			1	2	3	4	5						1	2
2	3	4	5	6	7	8	6	7	8	9	10	11	12	3	4	5	6	7	8	9
9	10	11	12	13	14	15	13	14	15	16	17	18	19	10	11	12	13	14	15	16
16	17	18	19	20	21	22	20	21	22	23	24	25	26	17	18	19	20	21	22	23
23	24	25	26	27	28	29	27	28	29	30	31			24	25	26	27	28	29	30
30	31																			
OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7			1	2	3	4							1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
														31						

The Academic Calendar

The academic year begins on the Monday before the fourth Thursday in September and ends on Saturday before the thirty-eighth Monday. It includes two approximately equal semesters and three vacation periods: two weeks including Christmas and New Year's Days; one week at the close of the mid-year examination period, and one week near the first of April.

The first semester ends on the Saturday before the twentieth Monday. The second semester begins on the twentieth Monday of the academic year.

1960

First Semester 1960-61

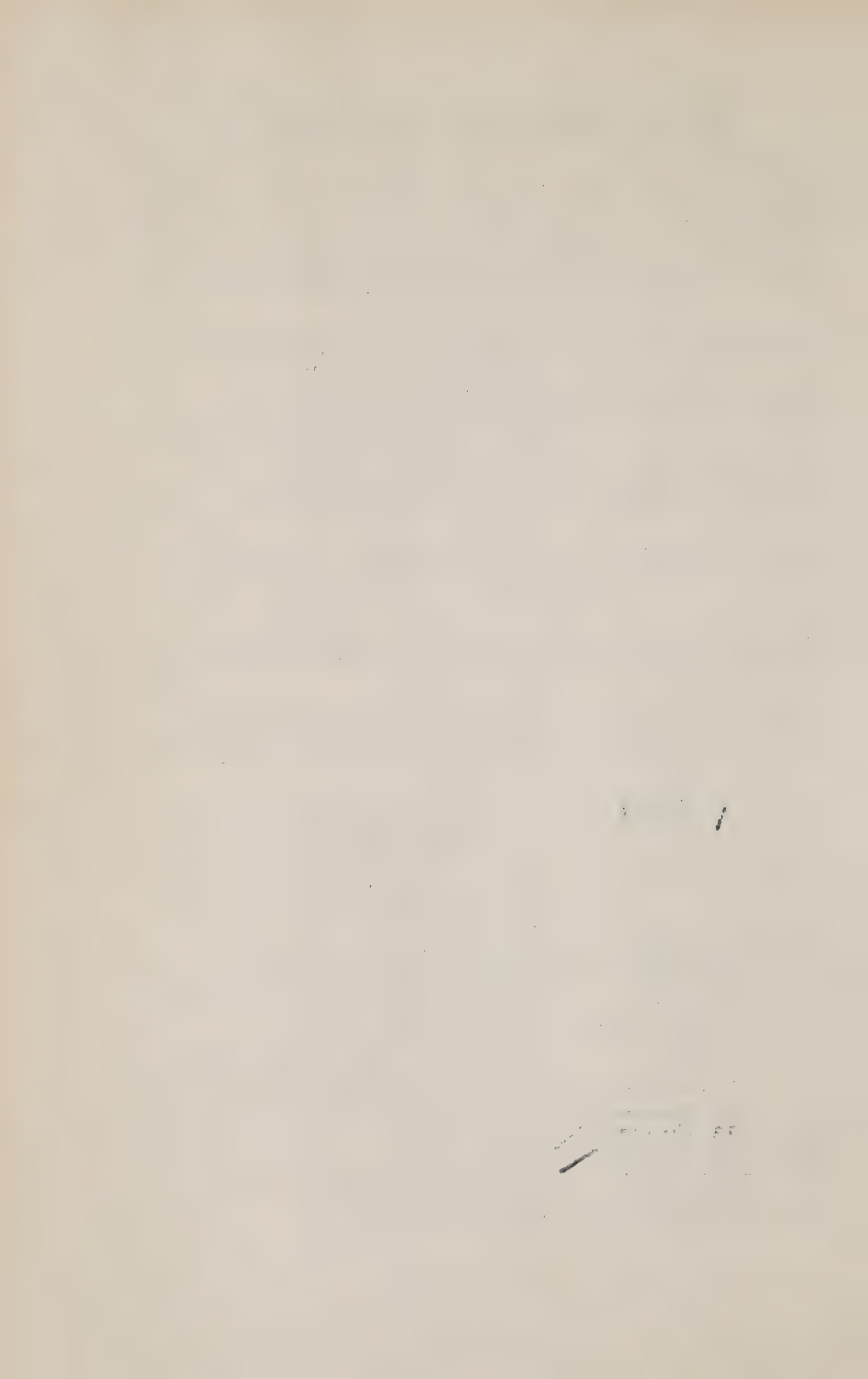
September 19	Monday	—	Registration day. Beginning of academic year 1960-61.
October 12	Wednesday	—	Columbus Day. Not a holiday.
November 1	Tuesday	—	Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1961.
November 11	Friday	—	Veterans' Day. Not a holiday.
November 14	Monday	—	Mid-semester reports due at 9 a.m.
November 23	Wednesday	—	Beginning of Thanksgiving recess at close of classes.
November 28	Monday	—	End of Thanksgiving recess at 8 a.m.
December 17	Saturday	—	Beginning of Christmas recess at close of classes.

1961

Wednesday	—	January 4	End of Christmas recess at 8 a.m.
Wednesday	—	January 11	Registration for second semester. Classes omitted.
January 18	Wednesday	—	Classes omitted.
January 19	Thursday	—	Beginning of semester examination period.
January 28	Saturday	—	Beginning of mid-year recess after close of examinations.

Second Semester 1960-61

February 6	~~Monday~~ Tuesday	—	End of mid-year recess. Beginning of classes for the second semester.
February 10	Friday	—	Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June, 1961.
February 22	Wednesday	—	Washington's Birthday. Not a holiday.
March 27	Monday	—	Mid-semester reports due at 9 a.m.
April 1	Saturday	—	Beginning of spring recess at close of classes.
April 10	Monday	—	End of spring recess at 8 a.m.
April 19	Wednesday	—	Patriot's Day. Not a holiday.
May 15	Monday	—	Dissertations for the degree of Doctor of Philosophy due at Registrar's office at 9 a.m.
May 22	Monday	—	Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's office at 9 a.m.
May 23	Tuesday	—	Classes omitted.
May 24	Wednesday	—	Beginning of semester examination period.
May 25	Thursday	—	Memorial Day. A holiday.
May 30	Tuesday	—	Commencement Day.
June 11	Sunday	—	



Board of Trustees

FRANCIS H. DEWEY, JR. (1934)	Worcester, Mass.
ROBERT H. LOOMIS (1936)	West Newton, Mass.
FRANK L. ADAMS (1938)	Fort Lauderdale, Fla.
HOWARD M. BOOTH (1939)	Worcester, Mass.
SAMUEL H. DOLBEAR (1940), Vice Chairman	New York, N. Y.
RAYMOND T. GIFFORD (1947), Treasurer	Worcester, Mass.
JOHN JEPSON (1948), Chairman	Worcester, Mass.
HARRY C. COLEY (1948)	Worcester, Mass.
ROLAND A. ERICKSON (1951)	Worcester, Mass.
JOSEPH C. MOLDER (1954)	Worcester, Mass.
JACOB HIATT (1955)	Worcester, Mass.
RICHARD W. MIRICK (1957), Secretary	Worcester, Mass.
A. D. ROSS FRASER (1960)	Rome, N. Y.

ELECTED TO REPRESENT THE ALUMNI (Four-Year Term)

HAROLD D. WOODBURY (1959-60)*	Worcester, Mass.
EDWARD B. PECK (1957-)	Elizabeth, N. J.
ALANSON W. PARKES (1958-)	Boonton, N. J.
DAVID R. PORTER (1959-)	Wellesley, Mass.
J. WARREN NYSTROM (1960-)	Arlington, Va.

Academic Administration

HOWARD B. JEFFERSON, President
TILTON M. BARRON, Librarian
HENRY C. BORGER, JR., Dean of Students
ROBERT F. CAMPBELL, Dean of the College (1960-)
LYDIA P. COLBY, Registrar
THOMAS J. DOLPHIN, Director of The Evening College
M. HAZEL HUGHES, Dean of Women
ROBERT M. HYDE, Vice President
H. DONALDSON JORDAN, Dean of the College (1959-60)
DWIGHT E. LEE, Secretary of the Graduate Board
GEORGE H. MERRIAM, Director of Admissions
JOHN L. ROCHE, Assistant Director of Admissions
ROGER C. VAN TASSEL, Director of the Summer School

* Elected to fill a one-year, unexpired term.

Faculty

(President; Emeriti, alphabetically; Faculty and Officers of Instruction, alphabetically)

HOWARD BONAR JEFFERSON, PH.D., LL.D., L.H.D., President. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956. (1946-)

EMERITI

LEROY ALLSTON AMES, M.A., Professor of English Literature, Emeritus. (1908-44)

SAMUEL J. BRANDENBURG, PH.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, PH.D., Professor of Chemistry, Emeritus. (1926-59)

LORING HOLMES DODD, PH.D., L.H.D., Professor of English and Art, Emeritus. (1910-49)

ROBERT STANLEY ILLINGWORTH, M.A., ED.M., Professor of Speech and Drama, Emeritus. (1931-58)

HOMER PAYSON LITTLE, PH.D., LL.D., Dean of the College and Professor of Geology, Emeritus. (1922-54)

CAREY EYSTER MELVILLE, A.B., Professor of Mathematics, Emeritus. (1909-48)

BENJAMIN SHORES MERIGOLD, PH.D., SC.D., Professor of Chemistry, Emeritus. (1903-46)

DAVID POTTER, PH.D., Professor of Biology, Emeritus. (1924-59)

HEINZ WERNER, PH.D., Professor of Psychology, Emeritus. (1947-60)

FACULTY AND OFFICERS OF INSTRUCTION

MERRITT GOLD ABRASH, M.I.A., Instructor in History. B.A., Washington and Lee University, 1951; M.I.A., Columbia University, 1958. (1960-)

VERNON AHMADJIAN, PH.D., Assistant Professor of Biology. A.B., Clark University, 1953; A.M., Harvard University, 1956; Ph.D., 1960. (1959-)

¹FESTUS GILBERT AMSDEN, A.B., Assistant Director of Physical Education for Men. A.B., Clark University, 1951. (1954-60)

KARL OSCAR EMANUEL ANDERSON, PH.D., Associate Professor of English. A.B., Harvard University, 1927; M.A., 1928; Ph.D., 1942. (1945-)

ROY STETSON ANDERSON, PH.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL JOHN RICHARD ARNDT, PH.D., Professor of German. M.A., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

ROBERT WILLIAM BAKER, PH.D., Associate Professor (Affiliate) of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE ANTHONY BALKO, JR., M.B.A., Assistant Professor of Business Administration. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)

MITCHELL B. BALTER, PH.D., Assistant Professor (Affiliate) of Clinical Psychology. B.A., University of Michigan, 1950; M.A., University of Connecticut, 1952; Ph.D., 1959. (1958-)

RAYMOND EDMOND BARBERA, PH.D., Assistant Professor of Romance Languages. A.B., Brooklyn College, 1947; M.A., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

CLAUDE WILLIS BARLOW, PH.D., Associate Professor of Classics. A.B., Amherst College, 1928; M.A., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)

¹ Died June 19, 1960.

- TILTON MARSHALL BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)
- JAMES FRANKLIN BEARD, JR., PH.D., Associate Professor of English. A.B., Columbia College, 1940; M.A., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)
- ‡ROBERT NELSON BECK, PH.D., Associate Professor of Philosophy. A.B., Clark University, 1947; M.A., Boston University, 1948; Ph.D., 1950. (1948-)
- CLEMENS E. BENDA, M.D., Associate Professor (Affiliate) in Psychology. M.D., University of Berlin, 1922. (1958-)
- BRUCE A. BEVELHEIMER, M.A., Instructor in Mathematics. A.B., University of Michigan, 1956; A.M., 1957. (1960-)
- ROGER MAURICE ALBERT BIBACE, PH.D., Assistant Professor (Affiliate) in Clinical Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)
- JACK WILLIAM BIRCH, PH.D., Visiting Professor of Geography. B.A., University of Reading, 1949; Ph.D., 1957. (1960-)
- HENRY CHARLES BORGER, JR., PH.D., Associate Professor of Education and Dean of Students. A.B., Princeton University, 1933; M.A., Columbia University, 1938; Ph.D., 1954. (1950-)
- CARL OSCAR BORRNER, JR., A.B., Instructor in Public Speaking. A.B., Wesleyan University, 1953. (1957-60)
- PHILIP HUBERT BREEN, LL.B., Lecturer in Business Law. A.B., College of the Holy Cross, 1920; LL.B., Boston University, 1923. (1947-)
- †CHARLES THEODORE BUMER, PH.D., Professor of Mathematics. B.Sc., Denison University, 1919; M.A., Harvard University, 1922; Ph.D., Ohio State University, 1931. (1948-60)
- GUY HARVEY BURNHAM, A.M., Instructor in Geography and Cartographer, Graduate School of Geography. A.B., Clark University, 1916; A.M., 1922. (1922-)

‡ Absent on leave, second semester, 1960-61.

† Died March 14, 1960.

GEORGE CAMOUGIS, PH.D., Assistant Professor of Biology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

ROBERT FRANCIS CAMPBELL, PH.D., Lecturer in History and Dean of the College. A.B., Yale College, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)

HANS CAROL, PH.D., Visiting Professor of Geography. Ph.D., University of Zürich, 1945. (1958-60)

*WILLIAM HOYT CARTER, JR., PH.D., Associate Professor of English. A.B., Middlebury College, 1936; M.A., Harvard University, 1938; Ph.D., 1951. (1949-)

GEOFFREY CLIVE, PH.D., Assistant Professor of Philosophy. B.A., Colgate University, 1948; M.A., Harvard University, 1950; Ph.D., 1953. (1957-)

JAMES MADISON COFFEE, ED.D., Associate Professor of Education and Director of Placement. A.B., Duke University, 1949; M.A., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)

MORRIS HAROLD COHEN, PH.D., Associate Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)

LYDIA PERRY COLBY, Registrar. (1932-)

PETER ELIA COMALLI, JR., PH.D., Assistant Professor (Affiliate) of Psychology. A.B., Clark University, 1949; A.M., 1951; Ph.D., 1956. (1958-)

SAMUEL PENDLETON COWARDIN, III, M.A., Assistant Professor of Fine Arts. A.B., Harvard University, 1943; M.A., 1948. (1949-)

WALTER HOBSON CROCKETT, PH.D., Associate Professor of Psychology. A.B., University of Kansas, 1947; M.A., 1949; Ph.D., University of Michigan, 1953. (1957-)

†JESSIE CAMPBELL CUNNINGHAM, A.M., Instructor in English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)

* Absent on leave, first semester, 1959-60.

† Absent on leave, 1959-60.

- TAMARA DEMBO, PH.D., Associate Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)
- THOMAS JOSEPH DOLPHIN, A.B., Director of The Evening College. A.B., Rutgers University, 1951. (1957-)
- RALPH I. DORFMAN, PH.D., Professor (Affiliate) of Chemistry. B.S., University of Illinois, 1932; Ph.D., University of Chicago, 1934. (1955-)
- JAMES STANHOPE EDWARDS, M.A., Associate Professor of German. A.B., Brown University, 1936; M.A., 1938. (1947-)
- BURTON N. GATES, PH.D., Research Associate in Biology. A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909. (1954-)
- HAROLD GOODGLASS, PH.D., Lecturer in Psychology. B.A., College of the City of New York, 1939; M.A., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)
- *DANIEL GORENSTEIN, PH.D., Associate Professor of Mathematics. A.B., Harvard University, 1943; Ph.D., 1950. (1951-)
- ROCHELEAU ZEPHIRIN GRANGER, JR., A.M. IN ED., Director of Physical Education for Men. A.B., Clark University, 1938; A.M., in Ed., 1939. (1949-)
- SANTE GRAZIANI, M.F.A., Associate Professor (Affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)
- WARREN D. GRIBBONS, ED.D., Assistant Professor of Education. A.B., Boston University, 1955; Ed.M., Harvard University, 1956; Ed.D., 1959. (1959-)
- GERALD N. GROB, PH.D., Assistant Professor of American History. B.S., College of the City of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)
- ROY CHALMERS GUNTER, PH.D., Associate Professor of Physics. B.S., Bowdoin College, 1938; M.A., Boston University, 1939; Ph.D., 1942. (1941-60)
- GORDON T. GWINN, PH.D., Associate Professor of Psychology. A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. (1949-)

* Absent on leave, 1960-61.

HERBERT HABER, M.A., Instructor in English. A.B., Brooklyn College, 1954; M.A., University of Chicago, 1955. (1958-)

GEORGE EDWARD HARGEST, M.B.A., Associate Professor of Economics and Business Administration and Acting Director of the Division of Business Administration. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)

M. EVELYN HARRIMAN, M.A. IN ED., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)

MORTON EDWARD HARRIS, PH.D., Assistant Professor of Mathematics. A.B., Yale College, 1955; A.M., Harvard University, 1956; Ph.D., 1960. (1960-)

SEYMOUR HAYDEN, A.M., Assistant Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948. (1957-)

‡SHERMAN STRONG HAYDEN, PH.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; M.A., Columbia University, 1936; Ph.D., 1942. (1946-)

M. HAZEL HUGHES, M.ED., Director of Physical Education for Women and Dean of Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)

ROBERT MOOERS HYDE, A.M., Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

VERNON JONES, PH.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)

HENRY DONALDSON JORDAN, PH.D., Professor of English History. A.B., Harvard University, 1918; M.A., 1922; Ph.D., 1925. (1931-)

BERNARD KAPLAN, PH.D., Associate Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)

ROBERT KASTENBAUM, PH.D., Lecturer in Psychology. B.A., Long Beach State College, 1954; Ph.D., University of Southern California, 1959. (1959-)

‡ Absent on leave, second semester, 1960-61.

- *GERSON KEGELES, PH.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-)
- FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)
- JESSE FANNIN KING, M.A., Associate Professor of Romance Languages. A.B., Pomona College, 1936; M.A., Harvard University, 1937. (1946-)
- WERNER KOELLA, M.D., Lecturer in Psychology. M.D., University of Zurich, 1942. (1958-)
- DONALD MAX KRUS, PH.D., Assistant Professor (Affiliate) of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-)
- DWIGHT ERWIN LEE, PH.D., Professor of Modern European History and Secretary of the Graduate Board. A.B., University of Rochester, 1921; A.M., 1922; Ph.D., Harvard University, 1928. (1927-)
- LESLIE LEIFER, PH.D., Assistant Professor of Chemistry. B.S., College of the City of New York, 1950; Ph.D., University of Kansas, 1959. (1959-60)
- THEODORE LEVENTHAL, PH.D., Assistant Professor (Affiliate) of Psychology. B.A., Brooklyn College, 1948; Ph.D., University of Kansas, 1953. (1955-)
- ROBERT EARLE LINGNER, M.A., Instructor in Geology. A.B., Clark University, 1954; M.A., University of Maine, 1956. (1956-)
- HERBERT LIPTON, PH.D., Assistant Professor (Affiliate) in Clinical Psychology. B.A., Rutgers University, 1949; A.M., Clark University, 1951; Ph.D., 1954. (1956-)
- WILLIAM CUSHING LORING, JR., PH.D., Visiting Lecturer in Economics. A.B., Harvard University, 1935; A.M., 1949; Ph.D., 1952. (1959-60)
- †RICHARD JEWETT LOUGEE, PH.D., Professor of Geomorphology. B.S., Dartmouth College, 1927; M.A., University of Michigan, 1929; Ph.D., Columbia University, 1938. (1947-60)
- CURTIS MARCHANT, M.A., Instructor in Romance Languages. B.A., University of California, 1947; M.A., 1949. (1959-)

* Absent on leave, 1959-60.

† Died May 16, 1960.

- ARTHUR EARL MARTELL, PH.D., Professor of Chemistry. B.S., Worcester Polytechnic Institute, 1938; Ph.D., New York University, 1941. (1942-)
- JAMES ACKLEY MAXWELL, PH.D., Professor of Economics. A.B., Dalhousie University, 1921; M.A., Harvard University, 1923; Ph.D., 1927. (1924-)
- FREDERICK EUGENE MELDER, PH.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-1946; 1950-)
- GEORGE HENRY MERRIAM, A.M., Director of Admissions. A.B., Clark University, 1944; A.M., Brown University, 1947. (1952-)
- JAMES MONIZ, A.M., Instructor in Economics. B.B.A., Clark University, 1956; A.M., 1958. (1959-60)
- DAVID MORIARTY, M.D., Professor (Affiliate) of Psychology. M.D., Boston University, 1947. (1960-)
- RAYMOND EDWARD MURPHY, PH.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)
- KAZUO NAKAMOTO, D.Sc., Assistant Professor of Chemistry. B.S., Ofaka University, Japan, 1945; D.Sc. 1953. (1959-)
- WILLIAM R. NES, PH.D., Associate Professor of Biochemistry. B.A., University of Oklahoma, 1946; M.S., University of Virginia, 1948; Ph.D., 1950. (1958-)
- *HOWARD WHITE NICHOLSON, PH.D., Associate Professor of Economics. B.A., Oberlin College, 1942; M.A., Harvard University, 1948; Ph.D., 1953. (1958-)
- THEODORE NICOL, PH.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; M.A., Harvard University, 1928; Ph.D., 1933. (1946-)
- RUDOLPH FINK NUNNEMACHER, PH.D., Professor of Biology. B.S., Kenyon College, 1934; M.A., Harvard University, 1935; Ph.D., 1938. (1939-)
- NICHOLAS LEWIS ONORATO, PH.D., Visiting Lecturer in Economics. B.S., Boston University, 1951; A.M., Clark University, 1952; Ph.D., 1959. (1957-59, 1960-)

* Absent on leave, first semester, 1960-61.

- LESLIE PHILLIPS, PH.D., Professor (Affiliate) in Clinical Psychology. M.A., University of Chicago, 1944; Ph.D., 1949. (1946-)
- LILLIAN RAEFF, PH.D., Lecturer in Psychology. B.S., College of the City of New York, 1950; A.M., Clark University, 1951; Ph.D., 1956. (1956-60)
- *MARC RAEFF, PH.D., Associate Professor of Russian History. M.A., Harvard University, 1947; Ph.D., 1950. (1949-)
- RELLY RAFFMAN, M.A., Assistant Professor of Music. A.B., Dartmouth College, 1943; M.A., Columbia University Teachers College, 1949. (1954-)
- ERWIN RAISZ, PH.D., Visiting Lecturer in Geography. Diploma, Royal Polytechnicum, Budapest, 1914; M.A., 1924; Ph.D., Columbia University, 1929. (1947-)
- J. RICHARD REID, PH.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; M.A., Harvard University, 1936; Ph.D., 1943. (1944-)
- JOHN THEODORE REYNOLDS, M.S., Assistant Professor of Biology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954. (1956-)
- PERCY MARTIN ROOPE, PH.D., Professor of Physics. A.B., Clark University, 1920; A.M., 1924; Ph.D., 1927. (1921-)
- HARRIS ROSENKRANTZ, PH.D., Associate Professor (Affiliate) of Biology. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)
- BERNARD SARACHEK, M.A., Assistant Professor of Business Administration. B.A., University of Kansas City, 1952; M.A., 1955. (1959-)
- NEIL ROLF SCHROEDER, M.A., Instructor in Public Speaking. A.B., Brown University, 1952; M.A., 1957. (1960-)
- DAYTON D. SHEPHERD, M.A., Lecturer in Education. B.S., Southwest Missouri State College, 1946; M.A., Yale University, 1950. (1954-)

* Absent on leave, 1960-61.

- ROBERT JOHN STAIRS, B.S., Assistant in Physical Education. B.S., University of Rhode Island, 1956. (1959-)
- JOHN SUNAPEE STUBBE, PH.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)
- THOMAS TAMOTSU SUGIHARA, PH.D., Associate Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-)
- STANLEY SULTAN, PH.D., Assistant Professor of English. B.A., Cornell University, 1949; M.A., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)
- BARRY D. TARGAN, M.A., Instructor in English. B.A., Rutgers University, 1954; M.A., University of Chicago, 1955. (1959-60)
- EDWARD N. TRACHTENBERG, PH.D., Assistant Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)
- ARNOLD TREHUB, PH.D., Lecturer in Psychology. A.B., Northeastern University, 1949; M.A., Boston University, 1951; Ph.D., 1954. (1958-)
- ALDO P. TRUANT, PH.D., Associate Professor (Affiliate) of Biology. B.A., University of Western Ontario, 1944; Ph.D., Yale University, 1949. (1959-)
- ROGER CARLETON VAN TASSEL, PH.D., Associate Professor of Economics and Director of the Summer School. A.B., Union College, 1947; M.A., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)
- SAMUEL VAN VALKENBURG, PH.D., Professor of Geography and Director of the Graduate School of Geography. Ph.D., University of Zürich, 1918. (1926-1929; 1932-)
- ANTHONY VARJABEDIAN, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-)
- JACK R. VILLMOW, PH.D., Visiting Lecturer in Geography. B.S. in Ed., University of Wisconsin, 1948; M.S., 1950; Ph.D., 1955. (1959-60)
- SEYMOUR WAPNER, PH.D., Professor of Psychology. A.B., New York University, 1939; M.A., University of Michigan, 1940; Ph.D., 1943. (1948-)

HENRY JOHN WARMAN, PH.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)

JOSEPH WEINREB, M.D., Professor (Affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-)

MORTON WIENER, PH.D., Associate Professor of Psychology and Director of Clinical Psychology Training Program. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)

JOACHIM F. WOHLWILL, PH.D., Assistant Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)

MABEL E. WRAY, M.A., Visiting Lecturer in Education. B.S. in Ed., Worcester State Teachers College, 1933; M.A., Columbia University, 1946. (1959-)

Teaching Assistants, 1959-1960

GLEN ALEXANDRIN, Economics. B.A., University of Alberta, 1958; M.A., 1959.

SAMUEL E. ALLEN, JR., History. A.B., Morehouse College, 1958; M.A., Clark University, 1959.

FREDERICK ANDERSON, Chemistry. A.B., Reed College, 1959.

SHIH-CHEN AUYANG, Biology. B.A., National Tung Chi University, Shanghai, China, 1949.

MARGERY BODANSKY, Psychology. B.A., Middlebury College, 1955; A.M., Clark University, 1957.

WILFRIED BRAJE, International Relations. Uebersetzer, Heidelberg, 1955; M.A., University of North Carolina, 1958.

SUMNER B. COTZIN, Mathematics. B.S., Yale University, 1938; Ph.D., 1941.

MARIO R. DiNUNZIO, Government. A.B., Providence College, 1957; M.A., Boston College, 1958.

NORMAN DUDEY, Chemistry. A.B., University of Kansas, 1959.

GEORGE GAY, Physics. A.B., Clark University, 1959.

PETER HOUSE, Sociology (first semester). A.B., American International College, February 1959.

SATYA JINDAL, Chemistry. B.S., S. D. College, Punjab, India, 1954; M.S., Victoria College, Gwalior, India, 1956.

STEPHEN KWAN, Chemistry. B.S., Northwestern University, 1953.

JEAN B. LETENDRE, Chemistry. B.S., Bradford Durfee College of Technology, 1959.

RICHARD V. OLSON, Mathematics. B.S., Worcester Polytechnic Institute, 1954.

EDWARD OTREMBA, Chemistry. B.S., State Teachers College, Albany, 1958.

ARMAND RUBY, Chemistry. B.S., Worcester Polytechnic Institute, 1959.

ALLISON P. STEVENS, Education. A.B., Clark University, 1947; Ed.M., Worcester State Teachers College, 1956.

HEDWIG SZYNALSKA, Biology. B.A., University of Bridgeport, 1959.

JAMES WIGHTMAN, Sociology (second semester). B.S., Franklin and Marshall College, 1954; M.A., Clark University, 1956.

Appointments from Graduate Funds, 1959-1960

Alumni Association Fellow

MARGERY BODANSKY, Psychology. B.A., Swarthmore College, 1954; A.M., Clark University, 1956.

George S. Barton Scholars

ROLAND E. DUFAULT, JR., History. B.S., College of the Holy Cross, 1959.

RONAL E. MADNICK, Education. A.B., Clark University, 1959.

Eliza D. Dodge Scholar

WOO SIK KEE, Economics. B.S., University of Wyoming, 1960.

Joseph F. Donnelly Fellows

GLEN C. ALEXANDRIN, Economics. B.A., University of Alberta, 1958; M.A., 1959.

ROY J. FLETCHER, Geography. B.A., University of Alberta, 1957; M.A., University of Minnesota, 1959.

DWAIN L. FORD, Chemistry. A.B., Emanuel Missionary College, 1949.

JOHN O. IATRIDES, History. A.B., Ohio Wesleyan, 1953; M.A., University of Michigan, 1954.

TOSHIO IRITANI, Psychology. B.A., Tokyo University, 1955; M.A., 1957.

DONALD H. NORTON, History. B.A., University of Connecticut, 1958; M.A., 1959.

GOVIND S. SINGH, Geography. B.A., University of Allahabad, 1948; M.A., 1950.

JAMES W. WIGHTMAN, Economics. B.S., Franklin and Marshall College, 1954; A.M., Clark University, 1956.

John White Field Scholar

LAWRENCE T. LEWIS, Geography. B.S.Ed., Worcester State Teachers College, 1959.

Austin S. Garver Scholars and Fellows

BARBARA KLEIN, Psychology. B.A., Brooklyn College, 1957.

VICTOR E. NOSHKIN, JR., Chemistry. B.S., San Francisco State College, 1958.

FISKE RAWDEN, Geography. A.B., Wayne State University, 1958.

CAROLYN A. STEIDLE, Geography. B.A., Mount Holyoke College, 1959.

DANIEL R. MACGILVRAY, History. B.S.Ed., Gorham State Teachers College, 1957; A.M., Clark University, 1958.

DONALD J. WHEATON, Economics. B.S. in B.A., Northeastern University, 1959.

Charles H. Thurber Scholar

RALPH R. MOORE, History. B.S., Boston College, 1959.

Administration

ROBERT I. ANDERSON, M.D., Medical Director

IRMA M. BROWN, Secretary to the President

JOHN A. BURGESS, Editor of the News Bureau

RICHARD J. COURTNEY, Manager of the Bookstore

GLADYS DILIBERTO, Secretary to the Dean of Students and to the
Dean of the College.

JOSEPH GERMAIN, Superintendent of Buildings and Grounds

RAYMOND T. GIFFORD, Treasurer

MARY A. HUBBARD, Bursar

GEORGE M. JOSEPH, M.D., Medical Director

MARY A. KEARNS, Administrative Assistant in Alumni Affairs

ANNA C. MCATEE, Nurse in charge of Infirmary

DAVID L. MURPHY, Assistant to the President

PATRICK V. SHEEHAN, Assistant Treasurer

HENRY L. SIGNOR, Alumni Secretary

Academic Boards and Committees

The President and Vice President are *ex officio* members of all boards and committees.

UNIVERSITY SENATE: President (*chairman*), Anderson, Beck, Bumer,* Jones, Jordan, Lee, Martell, Maxwell, Nunnemacher, Reid, Roope, Van Valkenburg, Wapner,¹ Werner.†

COMMITTEE ON PERSONNEL AND ORGANIZATION: President (*chairman*), Dean of the College, *ex officio*; Reid (*vice chairman and secretary*), Beck, Borger, Bumer,* Lee, Maxwell.

ADMINISTRATIVE COMMITTEE: Dean of the College (*chairman*), Borger, Hughes, Merriam, Sheehan.

GRADUATE BOARD: President (*chairman*), Lee (*secretary*), Bumer,* Camougis,¹ Gorenstein,¹ Gwinn, Hayden, Jones, Jordan, Kegeles,² Martell, Maxwell, Melder, Murphy, Nunnemacher, Roope, Sugihara, Trachtenburg,² Wapner, Werner.†

COMMITTEE ON CREDENTIALS: Van Valkenburg (*chairman*), Lee (*secretary*), Jones, Martell, Wapner,¹ Werner.†

COMMITTEE ON PROFICIENCY IN FOREIGN LANGUAGES: Arndt, Reid, representative of student's major department.

ACADEMIC COUNCIL: Dean of the College (*chairman*), Beard, Beck, Nunnemacher, Reid, Roope, Wapner.

COLLEGE BOARD: Dean of Students (*chairman*¹), Dean of the College, Dean of Women, *ex officio*; Beck, Coffee, Cowardin, Melder, Reynolds.

COMMITTEE ON ADMISSIONS: Merriam (*chairman*), Dean of the College, Dean of Students, Dean of Women, *ex officio*; Barlow, Hayden, Nicol, Reynolds, Roope.³

COMMITTEE ON ATHLETICS: Warman (*chairman*), Borger, Granger, Hughes, Maxwell, Stubbe.

* Died March 14, 1960.

¹ Appointed 1960.

† To 1960.

² Kegeles on leave, 1959-60; replaced by Trachtenberg.

³ To 1960.

COMMITTEE ON SCHOLARSHIPS: Hayden (*chairman*); Director of Admissions, *ex officio*; Barron, Van Tassel.

EVENING COLLEGE BOARD: Director of The Evening College (*chairman*), *ex officio*; Beck, Clive, Comalli, Grob, Hargest, Melder.

LIBRARY COMMITTEE: Cohen (*chairman*), Anderson, Gorenstein.

STUDENT ACTIVITIES FUND COMMITTEE: Roope (*chairman*), Burnham, Hargest, Sheehan (*treasurer*).

ADMINISTRATIVE COMMITTEE FOR THE DIVISION OF BUSINESS ADMINISTRATION: Hargest (*chairman*), Balko, Jordan, Maxwell.

A Brief History of the University

In February of each year, Clark University celebrates Founders' Day. This custom commemorates the beginning of the university chiefly through the efforts of two men, Jonas Gilman Clark, a sagacious merchant and businessman for whom the university is named, and Dr. Granville Stanley Hall, an educator of breadth and vision.

Mr. Clark, a native of Worcester environs, became wealthy during the California Gold Rush by supplying miners and others with manufactured goods. He increased his personal fortune through wise business dealings initiated after his return to the East at the end of the Civil War. He later returned to Worcester where he established a residence and became interested in civic affairs. It was during this period of his life that he decided to endow an institution of higher learning. His last years were largely devoted to the project. In this, he was assisted by his wife, Susan, and a group of prominent Worcester citizens, including George F. Hoar, a United States Senator from Massachusetts, and General Charles Devens.

In 1887, the Trustees of Clark University were incorporated. Construction started that year on a main building, known today as Jonas G. Clark Hall, and the Science Building. Dr. Hall was appointed the first president of the university and a fortunate choice it was. He had been a professor of philosophy, psychology, and education at The Johns Hopkins University and had already established his reputation as a vigorous and original scholar.

Recognizing the need for graduate institutions in the United States (there was at that time only one titled graduate school in the United States—The Johns Hopkins University), President Hall began the organization of an educational institution which would be solely concerned with graduate study and research. As a result, Clark University became the second graduate school established in the United States and for 13 years operated only as a graduate school.

This unusual educational idea attracted the attention of a number of brilliant and original scholars who, upon President Hall's urging, joined the Clark University faculty. They constituted one of

the most outstanding communities of scholars this country had then seen. The first students entered the university in 1889 and its first graduates received diplomas in 1891. In 1900, Clark University was one of the 14 charter members of the Association of American Universities. The brilliance of both teachers and students soon established the scholarly reputation of the university.

While Mr. Clark supported President Hall's concept of graduate education, he was also interested in an undergraduate college which catered to men and particularly those men who had limited financial resources. Accordingly, a codicil to his will, effective upon his death in 1900, provided for an undergraduate college with a three-year curriculum.

In compliance with the codicil, the trustees established Clark College. It was to have an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, then serving as the first United States Commissioner of Labor, was selected as the first president of Clark College. Rufus C. Bentley was named by the trustees as the first Dean of Clark College.

From its beginning, Clark College had an educational philosophy which was marked by seriousness of purpose and hard work. Inasmuch as the bachelor's degree was granted after three years of study, as opposed to the more common four-year curricula of the day, the student carried a heavy program of study. There were intramural contests rather than intercollegiate sports and extra-curricular activities were at a minimum. Though entrance requirements were informal, a high standard of performance was necessary to remain in college.

The educational program formulated for Clark College by President Wright and Dean Bentley complemented the already-established program of the graduate school. It was only a matter of time before the undergraduate college and the graduate school, then associated but distinct, became one educational and administrative unit.

President Wright, who died in 1909, was succeeded by Edmund Clark Sanford, a professor of psychology in the graduate school. President Hall resigned in 1920 and President Sanford felt the time was ripe to unite the undergraduate college and graduate school. He resigned from the presidency to return to teaching and scholar-

ship, leaving the field open for reorganization of the two entities under a single president. This the trustees decided to do and cast about for a man who would become the president of Clark University, which henceforth would include both the graduate and the undergraduate divisions.

In 1920, Walter Wallace Atwood, a professor of physiography at Harvard University, was selected by the trustees as president. During his tenure, there were significant changes in both the educational program and the physical plant. There was a reorganization of the graduate school and undergraduate college faculties and administrations into a single unit. The three-year curriculum leading to the bachelor of arts degree was increased to four years. The Graduate School of Geography was founded. Participation in intercollegiate activities, including athletics, was encouraged. Additions to the physical plant included a men's dormitory, an athletic field, a gymnasium, a library tower and an auditorium. The latter was named Atwood Hall in honor of the president.

In 1941, the Division of Business Administration was established. Also, in 1941, Clark University became co-educational when the trustees voted to start the Women's College of the university.

President Atwood retired in 1946 after 26 years in office. His successor was Howard Bonar Jefferson, a professor of philosophy and Director of the School of Philosophy and Religion at Colgate University.

Under the vigorous leadership of Dr. Jefferson, the university has continued to take great strides. The undergraduate curriculum has been enriched by the addition of a Department of Philosophy and the introduction of a series of general education courses. In 1953, a chapter of Phi Beta Kappa, the national liberal arts honor society, was established at Clark University. Courses in mathematics leading to the master's degree were re-established.

In 1953, The Evening College of Clark University was organized as an institution for adult learning. It provides university education for adults and offers an opportunity for persons to earn a bachelor's degree exclusively by evening study. In addition, it frequently organizes non-credit courses, institutes and seminars as a community service.

In 1958, the Institute of Human Development was established

as an adjunct of the Department of Psychology. A center of psychological study, its purpose is to develop an all-inclusive concept of human development. In 1960, an electronic language laboratory was installed at the university.

During Dr. Jefferson's tenure, the university has almost doubled its physical plant. A new chemistry laboratory was opened in September, 1958. In the following year, two new dormitories and a student center were opened. The student center was named in honor of Dr. Jefferson. In addition, the university purchased a number of buildings for use as dormitories, faculty apartments and a conference center.

Today, one can receive instruction leading to the degree of Doctor of Philosophy in chemistry, economics, geography, history and international relations, and psychology. Master's degrees can be obtained in these fields and also in biology, education, government, mathematics, physics, and sociology. The undergraduate may take courses in these fields and, in addition, in business administration, classics, English, fine arts, geology, German, philosophy, and Romance languages.

Not content to maintain itself on its past reputation, the university has been busily engaged in planning for its future. Accordingly, a series of committees composed of faculty, alumni and prominent citizens of Worcester have been meeting since 1959 to develop goals for the university's future and to plan ways to achieve these goals. That the university has taken this step seems to indicate that it is not willing to grow, as "Topsy" grew, but that it wishes to plan for an orderly development using to the fullest its rich resources for original research and scholarly instruction.

Worcester and the University

When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for coöperation between the university and the community which has persisted throughout the history of the institution.

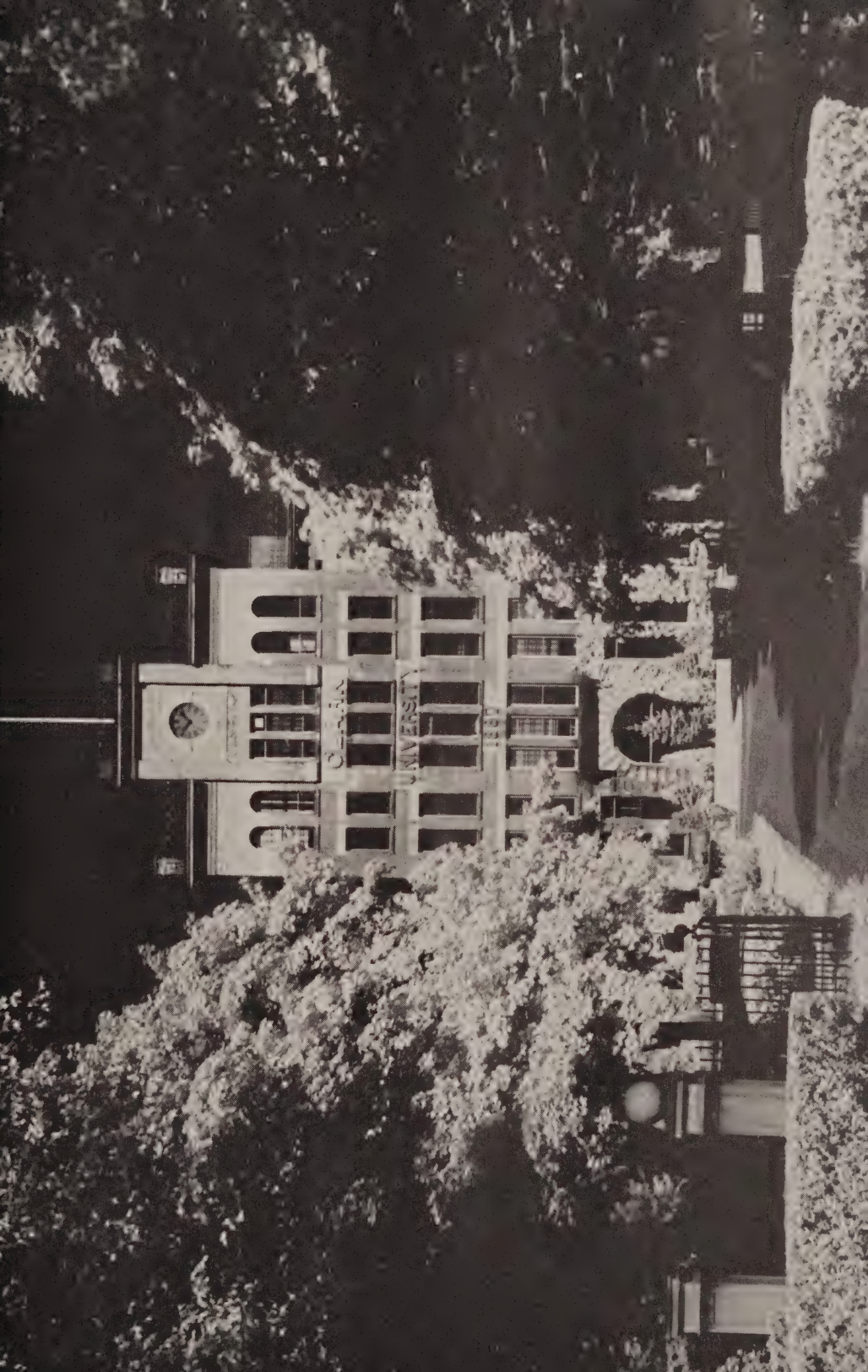
The intellectual life of the city has been enriched by the contributions of the faculty and of distinguished guests whom the university has brought to Worcester. Members of the staff have served local institutions both public and private in many ways.

The college has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere. The Graduate School has aided the more gifted to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system.

In turn, the university has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

There is particularly close coöperation between the Department of Fine Arts and the Worcester Art Museum, between the Department of History, Government, and International Relations and the American Antiquarian Society, between the Department of Chemistry and the Worcester Foundation for Experimental Biology, and between the Department of Psychology and the Worcester State Hospital. The Worcester Public Library and the Clark University Library cooperate by avoiding duplication in the coverage of certain subjects and by a corresponding widening of the coverage in the fields assigned to each.

The university is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purpose is to strengthen the bonds of mutual interdependence and coöperation.





The Physical Plant

THE UNIVERSITY CAMPUS is situated off Main Street approximately a mile and a quarter from the business center of Worcester. The educational and administrative activities of the university are centered here. On adjacent property facing the campus on Woodland and Downing Streets are dormitories, the infirmary, and residences of the President and of the Dean of Students. A small athletic field, opposite the campus on Maywood Street, provides clay tennis courts and a running track. A larger field, at the corner of Beaver Street and Park Avenue, is used for baseball, soccer, and other sports. The Hadwen Arboretum, the gift of Obadiah B. Hadwen, is a tract of about twenty acres at the intersection of Lovell and May Streets. The university also owns a number of individual properties in the vicinity of the campus.

JONAS G. CLARK HALL, completed in 1889, is a four-story granite and brick structure containing about ninety rooms. It houses the general academic offices of the university and the offices and classrooms of many of the departments of instruction. Located on the second floor is a student's lounge. The Institute of Human Development has been established on the fourth floor following remodeling in 1957-58. Also housed in this building is a women's gymnasium.

THE SCIENCE BUILDING, also completed in 1889, houses the Department of Physics and will house the Department of Biology. Located at the corner of Woodland and Maywood Streets, this building is also undergoing a remodeling of its facilities.

THE LIBRARY, at the corner of Main and Downing Streets, was enlarged in 1910 by the addition of a wing extending along Main Street. Part of this wing is used for library purposes but the major portion of the wing, referred to as the Geography Building, houses the Graduate School of Geography, the offices of the President, Vice President, and other members of the administration. A second addition to provide for the growing book collection was added to the library in 1939. This is a tower which connects the Library with Atwood Hall.

ATWOOD HALL, which is entered from Woodland Street, extends along Downing Street to join the library tower. It provides an

auditorium seating 800 which is used for college gatherings and other university functions.

THE ALUMNI GYMNASIUM, completed in 1938, is at the corner of Main and Maywood Streets. It provides a gymnasium floor of ample size with seating capacity for 800 persons. It also has showers and locker facilities for intramural and intercollegiate athletics and houses the offices of the Department of Physical Education. In addition, the building contains the offices of the Alumni Secretary and a comfortable lounge which provides a convenient and attractive meeting place for university organizations.

ESTABROOK HALL, at the corner of Woodland and Charlotte Streets, formerly was used as a dormitory for men as well as the university dining hall but since the construction of the new dormitory and the student center, the building will now be used to house educational and undergraduate facilities.

JEFFERSON HALL, completed in 1959, serves as the center for many student functions and activities. Within the building is contained the university dining hall, a snack bar, both faculty and student lounges, a recreation room, student mail boxes and the University Bookstore.

THE MEN'S DORMITORY, completed in 1959, is located beside Estabrook Hall. The modern and functional three-story building has facilities for 195 male students with both formal and informal lounges for students' leisure time.

THE WOMEN'S DORMITORY, completed in 1959, is similar in structure to the men's dormitory. It can house 137 women students and also has both formal and informal lounges.

JEPPSON LABORATORY, completed in 1958, contains the Department of Chemistry, with 27,000 square feet of space for laboratories, a library, classrooms and offices. Within the building is a multipurpose lecture hall, Johnson Hall, seating 174 persons.

UNIVERSITY APARTMENTS, purchased in 1958, formerly housed women students while the new Women's Dormitory was being built. This building is now used for faculty and married student housing.

THE CONFERENCE CENTER, located near the campus, was originally the site of the Institute of Liberal Studies for Executives but is now used for faculty and administrative housing and has a center for college and university meetings.

Organization

THE GRADUATE SCHOOL offering instruction leading to the degrees of Master of Arts and Doctor of Philosophy.

THE GRADUATE SCHOOL OF GEOGRAPHY offering instruction leading to graduate degrees in Geography.

THE COLLEGE FOR MEN (Clark College) offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE COLLEGE FOR WOMEN offering a general college program leading to the degree of Bachelor of Arts and a program leading to the degree of Bachelor of Science in Business Administration.

THE UNDERGRADUATE DIVISION OF BUSINESS ADMINISTRATION which supervises the program in Business Administration in the undergraduate colleges.

THE EVENING COLLEGE offering programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration.

THE LIBRARY, with an endowment separate from the endowment of the teaching branches of the University.

THE CLARK UNIVERSITY PRESS, associated with the University for the publication of scientific books and journals.

The Library

TILTON M. BARRON, *Librarian*

MARION HENDERSON, *Reference Librarian*

ELIZABETH HASSINGER, *Catalog Librarian*

GUY BURNHAM, *Map Librarian*

The Clark University Library contains over 220,000 volumes and a collection of some 50,000 maps and charts. The collection is centrally housed and administered, and an open shelf system fosters free access to books and periodicals for student and scholar. Only rare books and maps and frequently used reference materials are non-circulating.

The collection reflects the history and growth of the university. The scholar's library of the early graduate school and the undergraduate library of Clark College merged and have developed through the years to serve the academic needs of Clark University. The richest holdings are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, and history and international relations. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. Particular attention is paid to major bibliographical and reference tools, and the Library currently receives nearly 1000 periodicals.

A music library of recordings contains a collection of classical and standard musical works and there is a listening room equipped with a record player.

A Language Center serves as a practice area for those who desire to increase their proficiency in speaking and reading a foreign language. Language records, a phonograph, and a tape recorder are available. A collection of foreign newspapers and periodicals serves to stimulate reading skill and to acquaint the student with the contemporary culture of foreign lands.

The Clark University Library coordinates its acquisition of new material and exchanges material with other libraries in the Worcester area.

Admission Information

The following information applies in general to the admission of students to Clark University. For additional information concerning The Evening College, the Summer School, or the graduate schools, turn to those sections of the catalog or address your inquiry to the appropriate officer at CLARK UNIVERSITY, WORCESTER 10, MASSACHUSETTS.

The Evening College: The Director of The Evening College

The Summer School : The Director of the Summer School

Graduate schools: The Secretary of the Graduate Board

For additional information, other than the following, concerning the undergraduate Men's College or Women's College, address your inquiry to: The Director of Admissions.

The university's telephone number is PLeasant 6-1525.

CLASSIFICATION OF STUDENTS

Four classes of students are accepted in the university.

1. UNDERGRADUATES: candidates for the degree of Bachelor of Arts or Bachelor of Science in Business Administration in the Men's College or the Women's College.

2. GRADUATE STUDENTS: prospective candidates for the degree of Master of Arts, Master of Arts in Education, or Doctor of Philosophy.

3. SPECIAL STUDENTS: persons, not prospective candidates for a degree, who wish to take advantage of the opportunities for study provided by the university and who give satisfactory evidence of adequate preparation for the work which they wish to undertake. Special students are under the supervision of the College Board.

4. SUMMER SCHOOL AND EVENING COLLEGE STUDENTS: persons who may be candidates for a degree or who may wish to take advantage of the opportunities for study provided by the Summer School or The Evening College.

See the catalogs of the Summer School and The Evening College.

In addition, AUDITORS, registered for attendance, but not for credit, may be admitted at the discretion of the administrative of-

ficers of the university. They pay the regular tuition charges but are not enrolled as students in the university and do not pay the matriculation fee.

The university reserves the right to require the withdrawal at any time of any student or auditor whose record in either conduct or scholarship fails to meet the expectations implied by his admission.

ADMISSION TO THE UNDERGRADUATE MEN'S COLLEGE OR WOMEN'S COLLEGE

An application for admission is bound inside the back cover of the catalog. Applications should be carefully prepared and must be accompanied by the applicant's scholastic record and the non-returnable application fee in order to receive consideration. Formal application should be made at the earliest possible date during the applicant's final year in secondary school.

The completion of a four-year high school program or its equivalent, including sixteen acceptable units of credit, is normally required for admission to the freshman class. The term "unit" is understood to mean a course of study in one subject taken throughout the school year (i.e. English, one year = 1 unit). An applicant must furnish official records from all preparatory schools attended.

The subject matter requirements for admission to the freshman class are as follows:

ADMISSION REQUIREMENTS FOR EITHER THE DEGREE OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Required subjects, 8 units

<i>English</i>	4 units
* <i>Mathematics</i> (algebra and geometry)	2 units
† <i>Foreign language</i> (in one language)	2 units

Restricted electives, 5 or more units in addition to the required units listed above

<i>Mathematics</i>	1 or 2 units
‡ <i>Foreign language</i>	1 to 4 units

* Applicants expecting to specialize in science are advised to present at least three units of mathematics.

† Normally required.

‡ A single "beginning unit" in a foreign language is not acceptable.

<i>Social studies</i> (history, government, civics, economics, etc.)	1 to 3 units
<i>Natural sciences</i> (physics, chemistry, biology, etc.)	1 to 3 units

Free electives, not more than 3 units

Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Admissions Committee.

College Entrance Examination Board. All applicants for admission must take the Scholastic Aptitude Test of the College Entrance Examination Board. This test may be taken in December, January, February or March of the applicant's senior year in preparatory school. In addition, applicants are required to submit a writing sample taken under controlled conditions. This requirement may be met by participation in the College Entrance Examination Board's December or January administration of such a controlled writing sample. At the discretion of the Committee on Admissions, applicants may be required to take the Achievement Tests of the College Entrance Examination Board in English, Mathematics, and one other subject area to be chosen by the applicant. The Achievement Tests should usually be taken in March of the applicant's senior year.

A bulletin of information concerning these examinations may be obtained without charge from the College Entrance Examination Board, P. O. Box 592, Princeton, New Jersey, or for the far west, from P. O. Box 9896, Los Feliz Station, Los Angeles 27, California.

Scholastic Quality Requirements. In addition to the Scholastic Aptitude Test of the College Entrance Examination Board, "certification" by the principal of the preparatory school in at least fourteen of the sixteen required units is normally necessary for admission without achievement examinations. An exception may be made if the applicant ranks in the upper quarter of the class with which he graduated.

ADMISSION WITH ADVANCED STANDING

An applicant for admission who has attended another institution of college grade is required to submit a letter of honorable dismissal, a complete transcript of his academic record at the institu-

tion last attended, his high school transcript, and such other information as the Committee on Admissions may request. No applicant can be considered for admission until all transcripts have been received. Tentative evaluation of credits for courses of college grade completed elsewhere will be made at the time of a student's first registration at Clark and will be used in planning his course program and in classifying him provisionally as a freshman, sophomore, junior or senior. Students admitted with transfer credits will be regarded as on probation during their first semester. Definite recording of the credit tentatively evaluated will be made only under the following conditions: (a) if a satisfactory semester record (no more than one "D" in a four- or five-course program) is attained in the first or second semester of residence; or (b) if the records of the student's first two semesters are both non-probationary. When a transcript has been accepted by the student concerned, no further revision of the amount of credit will be considered.

The bachelor's degree will be conferred only after at least one year in residence and the satisfactory completion of at least five full courses, or the equivalent in half courses, at Clark University. The period of residence normally includes the two semesters immediately preceding the granting of the degree.

Transfer students in the Business Administration Program should note the following regulations:

(1) "Business English" and "Business Mathematics" are not accepted for credit toward the degree.

(2) The university reserves the right to examine a student in any course required for the degree which is offered for transfer credit.

(3) A maximum of two courses (12 semester hours) in one area of concentration may be accepted for transfer credit without further confirmation. More than two courses in one area will not be accepted for transfer credit until a confirming course, at a higher level, has been completed at Clark University with a grade of C— or better.

(4) In no case will transfer credit be allowed for more than four courses (24 semester hours) in any one area.

(5) In any subject in which a full year course (6 semester hours)

is required at Clark, the university may deny the transfer of credit for a half-year course in that subject.

A graduate of the three-year course of the Worcester Art Museum School may be admitted as a candidate for the degree of Bachelor of Arts with the rank of *junior* in the college. In such cases the usual admission requirements must be met and the general subject-matter requirements for the degree must be satisfied.

ADMISSION DEPOSIT

When a student's application is complete and he has been tendered formal admission to Clark University, he will be required to indicate his acceptance of the offer of admission by making a deposit of \$50.00 to hold a place for him in the incoming class. This deposit is credited toward charges for the first semester. The deposit is forfeited in case the student does not enroll for the specified semester. This applies to all except graduate and special students. The deposit may also be used to reserve dormitory space.

ADMISSION OF SPECIAL STUDENTS

Applicants for admission as special students should address their inquiries to the Dean of Students (male) or Dean of Women and should be prepared to supply evidence of qualification for the study which they wish to undertake.

ADMISSION OF FOREIGN STUDENTS

Applications from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the university requirements for proficiency in the English language. Every foreign student must have medical insurance, preferably that of the Institute of International Education.

Tuition and Other Charges

Tuition, fees, and other charges are shown below. Certain special fees for the Graduate School of Geography are listed in that section. Charges for The Evening College and the Summer School are found in their respective catalogues.

Tuition, board, dormitory rent, and certain fees are due and payable ten days prior to the opening of each semester. No one is permitted to register for any semester until financial obligations are satisfactorily arranged. Veterans relying on government aid should have enough resources to meet the initial payments because the first government checks are often delayed. A penalty fee is levied for late registration or for late payment of charges.

Application fee. This fee must accompany the application for admission to the undergraduate colleges. It is not returnable.

Admission deposit. Required fee when student accepts his formal offer of admission.

Tuition. Tuition is based on a normal program of four or five courses. Students who enroll for more or less than the normal program pay on a per course basis, 1/5 full tuition.

Tuition refund policy. If a student withdraws during the first week of any semester, he is allowed a refund of 80% on tuition, the second week 60%, the third week 40%, the fourth week 20%. After the fourth week, no refund.

Activity fee. Paid by all undergraduates including part-time students but not special students.

Board. All undergraduates who do not live at home are required to eat at the Dining Room.

Dormitory rent. Undergraduates not living at home or in a fraternity house must live in the dormitories.

Insurance. All students are expected to subscribe to the student insurance plan which gives year round coverage for health and accidents.

Tuition:

Full program (4 or 5 courses)	\$525.00 per semester
Per course	105.00 per semester

Board:

\$240.00 per semester

Dormitory charges:

Room rent (single)	\$200.00 per semester
Room rent (double)	150.00 per semester
Key deposit	1.00 per year

Laboratory fees:

Physics, Biology, Geology, Psychology, Languages, and Chemistry II	\$ 15.00 per semester
All other Chemistry courses	20.00 per semester
Supplies and breakage:	
Chemistry courses except Organic	10.00 per year
Organic Chemistry only	20.00 per year

Other fees:

Application	\$ 10.00
Matriculation	5.00
Induction (Freshmen men)	25.00
Induction (Freshmen women)	35.00
Induction (Transfers)	10.00
Diploma (Seniors)	5.00
Insurance	16.00
Late registration	5.00
Late payment	5.00
Transcripts (no charge for first two)	1.00 each

Graduate School fees:

Diploma (master's degree)	5.00
Publications (master's degree)	10.00
Diploma (doctor's degree)	25.00
Publications (doctor's degree)	30.00

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THE UNDERGRADUATE COLLEGES

The Men's College and the Women's College constitute the primary undergraduate divisions of Clark University. Financially the two colleges are independent, educationally they operate as a unit.

Admission and degree requirements are identical in the two colleges. The colleges offer educational programs in the liberal arts and in business administration.

The liberal arts program provides instruction in each of the principal areas of human culture combined with the intellectual discipline resulting from concentration in a selected field of special interest. The program possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests. This program leads to the degree of Bachelor of Arts.

A program leading to the degree of Bachelor of Arts in which the essentials of a liberal education are combined with sound professional foundations in art is offered in cooperation with the Worcester Art Museum. Details of this program are given in the announcement of the Department of Fine Arts.

A description of the program leading to the degree of Bachelor of Science in Business Administration will be found in the announcement of the Division of Business Administration.

Induction and Registration

INDUCTION

Freshmen, both men and women, entering the university meet in the few days preceding the opening of the academic year for an induction program. It has been customary to spend the induction period at a well-equipped camp or summer hotel where there are ample facilities for recreation. Separate establishments and programs are provided for men and women.

During this period the members of the class become acquainted and meet a selected group of upperclass students as well as members of the college staff. Formal activities include tests which assist in placing a student in the proper class sections, individual and group conferences, and registration for a program of studies.

A modified induction program is provided for upperclass students entering the university. These transfer students to the undergraduate colleges do not attend the special camps but report early for testing, orientation, and registration.

FACULTY ADVISERS

A student admitted to either the Men's College or Women's College is assigned to a member of the faculty who advises the student on a program of courses and other matters. At the beginning of the freshman year the advisers are chosen from a limited group of freshman advisers. Later each student is encouraged to select an adviser of his or her own choosing. A change of advisers may be made on formal request addressed to the appropriate dean.

The adviser assists the student in choosing his program of studies and is available at all times for consultation on any matter which the student may wish to discuss with him. Ideally the adviser-student relationship develops into a relationship of mutual regard which frequently endures long after the college course has been completed.

REGISTRATION

Each student is required to register for a detailed program of courses at the beginning of every semester. Official notice is given well in advance of the dates on which registration is required. Fail-

ure to register within the period designated involves a charge of five dollars.

Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

Student Programs

An undergraduate student normally carries a program of five courses throughout the academic year, September to June, in addition to required physical education. In general it is expected that a course meeting three times weekly will require a minimum of two hours of preparation for each lecture or recitation. Laboratory periods are usually three hours in length.

A student carrying the regular program should, therefore, expect his college work to require from forty-five to fifty hours of his time per week, in addition to the time required for physical education.

College regulations are designed to permit a large degree of freedom in the adjustment of programs of study to individual differences of interest. Even in the freshman year, when the program is largely determined by the degree for which the student is enrolled, each student makes certain individual choices where alternative requirements or free electives are involved. Such choices deserve the most careful consideration since they frequently affect the general pattern of a student's program for the entire four years of the college course.

FRESHMAN PROGRAM

A freshman must choose his entire program from courses designated as "open to freshmen."

The following program is required of all candidates for the bachelors' degrees:

1. *English 11*, Composition and Literature.
2. Candidates for the Bachelor of Arts degree—*a course in a foreign language*.
Candidates for the Bachelor of Science in Business Administration degree—*Principles of Accounting*.

3. A course in "Group A," science and mathematics.
4. A course in "Group B," social sciences.
5. An elective.

Mathematics 11 must be elected by students who expect to major in Group A and students who are candidates for the B.S. in B.A. degree. This includes both pre-medical and pre-dental students. Students especially qualified by preparation, performance and interest may elect a second laboratory science in place of a course in Group B.

SOPHOMORE PROGRAMS

A sophomore must give priority in his program to any subject requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a "major" or an "integrated program" will be chosen. The remaining elective choices provide the opportunity for each student to broaden the range of his interests.

The selection of a major subject is required of candidates for the degree of Bachelor of Arts at the time of registering for the sophomore year. Candidates for the degree of Bachelor of Science in Business Administration select an "area of concentration" at the same time.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating "primarily for undergraduates;" they are not admitted to courses "for advanced undergraduates and graduate students," designated by numbers beginning with the numeral 2.

JUNIOR AND SENIOR PROGRAMS

Programs for the junior and senior years should be planned as a unit. This brings the entire college course under scrutiny; concentration, balance and diversity can be seen in relation to each other and adjusted to desired proportions; the inevitable choices between desirable courses, since all cannot be included in the program, can be made and costly mistakes due to haste and the overlooking of important facts can be avoided. Failure so to plan may result in the omission of important courses because of conflicts in the schedule or the alternation of courses in successive years.

Juniors and seniors may elect any courses "primarily for undergraduates" or for "advanced undergraduates and graduate students" subject to any conditions stated in the descriptions of the courses. Under special conditions and with the approval of the College Board and of the Secretary of the Graduate Board in each case, seniors who rank in the upper third of their class may be admitted to courses "primarily for graduate students" designated by numbers beginning with the numeral 3.

ACCELERATED PROGRAMS

At least three years of college study in residence is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and one-half years, if he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a summer school is granted only when it is officially authorized in advance in each individual case.

To complete the requirements for a bachelor's degree at the end of three years it is necessary for a student to carry a six-course program through all three years and to attend two six-week summer schools. Only students of exceptional ability and in excellent physical condition are advised to undertake such a program. To complete the requirements for a bachelor's degree at the end of three and one-half years it is necessary for a student to accumulate, within that time, credit for two and one-half courses in addition to a regular program. This may be accomplished without attendance at summer school if the student carries a six-course program through two and one-half years. More commonly a student will attend two summer schools and carry a six-course program for one semester or attend three summer schools.

SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better is permitted to register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for such a program in either semester if his average grade for the preceding semester is C— or better.

A freshman may normally register for a program of six courses in the first semester of his freshman year. In subsequent semesters he is subject to the regulation stated above.

For tuition charges see "per course" rate given under "Tuition and Other Charges."

WASHINGTON SEMESTER PROGRAM

The university participates in the Washington Semester program of The American University at Washington, D. C. Under this program a small number of superior students may be nominated to attend a semester (normally in the junior year) in the study of the United States government in the nation's capital.

This opportunity is particularly, but not exclusively, attractive to students majoring in government, international relations, history, economics and sociology. Full credit for the semester's work is given toward the degree at Clark. Inquiry and application should be made to the Dean of the College.

PARTIAL PROGRAMS

Under special circumstances programs of fewer than five courses may be permitted. In general no change of status or of obligation is involved when a student's program is reduced to four courses, nor is there any reduction in the charge for tuition.

A student whose program consists of fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education, are not required to attend the weekly assembly and do not pay the activities fee.

For tuition charges see "per course" rate under "Tuition and Other Charges."

PROGRAMS FOR SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are not required to attend the weekly assembly nor are they subject to a requirement

in physical education. Special students who register for programs of four or more courses are required to pay the activities fee; others are not required to pay this fee.

For tuition charges see "per course" rate under "Tuition and Other Charges."

PRE-PROFESSIONAL PROGRAMS

One function of the undergraduate colleges is to prepare students going on to a professional school or into graduate study. The proper foundation for subsequent training in many of the professions may be gained at Clark University. A student planning a professional career should consult with his adviser as early as possible in his college course in order to best shape an undergraduate program.

Although professional schools hesitate to lay down rigid requirements for admission, there are some professional areas, such as medicine and dentistry, which by the nature of the subject call for some undergraduate emphasis on preparatory subjects. In the case of teaching, Clark University offers courses necessary for state certification. It also offers a graduate program in education.

For information on pre-medical and pre-dental programs see the statements of the Departments of Biology and Chemistry. For information concerning teaching requirements consult the introductory material in the Department of Education course section. A pre-legal statement may be found under Sociology in the course listing for Economics and Sociology.

Requirements for a Bachelor's Degree

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration as stated below will be recommended for the appropriate degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

The following requirements apply to all candidates for a bachelor's degree:

1. *Residence.* A student must be in residence at least three academic college years. At least one full year and usually the last year before the degree is conferred must be spent at Clark University. Five one-year courses must be satisfactorily completed for each year in residence.

2. *Course Requirements.* All college regulations concerned with credit toward a degree are expressed in terms of courses. A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. If fractional courses are offered, these will be combined in computing total course credits. Undergraduates admitted to classes primarily designed for graduate students receive one-half course credit per semester irrespective of the number of weekly class meetings. Twenty full courses at a satisfactory level of scholarship are required for graduation.

3. *Physical Education.* Each undergraduate must complete three years of physical education, two hours per week.

4. *Assembly.* All undergraduates are required to attend the regular assembly.

Course credit may be obtained at the undergraduate level in the fields of instruction which for administrative purposes are classified into four "groups" as follows:

GROUP A (Science and Mathematics). Biology, chemistry, experimental psychology, geology, mathematics, and physics.

GROUP B (Social Science). Economics, education, geography, government, history, international relations, philosophy, psychology, and sociology.

GROUP C (Language and Literature). Greek, Latin, English, French, German, Spanish, and an interdepartmental course in language and literature.

GROUP D (Fine Arts). Art and Music.

In addition to the general requirements for a bachelor's degree previously listed, there are certain specific requirements for the degree of Bachelor of Arts and other equally specific requirements for the degree of Bachelor of Science in Business Administration.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. A MAJOR. A *departmental major* consists of *seven* courses designated by the department for this purpose. Four or five of these must be courses in the major subject, the remaining courses must be in fields of study closely related to the major department. A grade of higher than C— is required in at least eleven of the fourteen semester grades involved in the completion of an acceptable major.

Mathematics 11 is a freshman year requirement for all students intending to major in Group A (Science and Mathematics) including those who are taking pre-medical and pre-dental programs. Mathematics 11 may, with the major department's approval, be included in the seven courses constituting the major.

Students majoring in Group C (Language and Literature) who have not offered at least two units of Greek or Latin for admission are required to take a year's course in either classical civilization or elementary Greek or Latin. The course satisfying this requirement may, with the approval of the major department, be included in the seven courses constituting a major. The student's choice

of classical civilization or Greek or Latin is subject to the approval of the major department. If a language course is chosen, this requirement should normally be satisfied during the freshman year.

An *interdepartmental major* includes *eight* or more courses chosen with regard to related content and purpose in fields which cross departmental boundaries. Two such programs are now available. These will be found fully outlined in the catalog section entitled "Departments and Courses."

2. GROUP A (Science and Mathematics). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study. One of them *must* be a laboratory course. Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

3. GROUP B (Social Science). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study.

4. FOREIGN LANGUAGE. A course in a foreign language at or beyond the third-year college level. However, freshmen whose placement test shows them ready for such a third-year course may fulfill this requirement by taking two years of a second foreign language. Language study must begin in the freshman year. A student whose previous education has been in a language other than English may be relieved of the foreign language requirement upon the successful completion of the freshman English course.

5. ENGLISH. The requirement for a Bachelor of Arts degree includes one and one-half courses, English 11 in the freshman year and an additional half course. All students are required to maintain satisfactory proficiency in English.

6. FINE ARTS. A half course in fine arts or music or a year course in a foreign civilization must be completed.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

An integrated program developed around a "core curriculum" of twelve and one-half required courses consisting of the following:

English 11
Mathematics 11

Composition and Literature
Freshman Mathematics

BA 100	Principles of Accounting
Economics 11	Principles of Economics
BA 160	Business Statistics
Government 15	Introduction to Government
BA 170b	Principles of Management
BA 150a	Principles of Marketing
Economics 13a	Money and Banking
BA 120a	Corporation Finance
BA 140	Business Law
BA 290	Analysis of Business Problems
English 12a	Public Speaking

One year course in a laboratory science.

One year course in a social science, during the freshman year.

The student is also required to present no less than four and no more than five courses in an area of concentration. See the announcement of the Division of Business Administration in "Departments and Courses" for a description of these concentration areas and their programs.

High ranking students in Mathematics 11 may, with the consent of the Director of the Division, meet the requirement for Business Statistics by substituting Economics 29a, Statistical Methods, for BA 160, Business Statistics.

Academic Regulations

GRADES

At the end of each semester grades are reported for each student in each course in terms of A, excellent; B, good; C, average; D, poor; F, failure. The modifying symbols plus (+) and minus (—) are used with each of these letter grades with the exception of F, giving twelve levels of passing grades. A report of “incomplete” is permitted only when severe sickness or some other equally unavoidable circumstance prevents the completion of a course.

A record of “failure” in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade. A record of “incomplete” incurred in the first semester must be made up by the end of the academic year; if incurred in the second semester or summer term, it must be made up by “mid-semester” of the following fall. For a course not completed within the specified time the record of “incomplete” is changed to one of “failure.”

SCHOLARSHIP STANDARDS

Courses with the grades of D+, D or D— may not be counted toward a bachelor's degree beyond one-quarter of the total credit required; i.e., not more than five (5) such courses, or their equivalent in fractional courses, may be counted. In the administration of this regulation only grades received and credit earned in Clark University are considered. If grades are not available for some of the twenty courses required for the degree, the maximum credit which may be counted with grades of D+, D or D— is reduced to one-quarter of the total credit from all courses in which grades are available.

Classification of students. A student continues to be listed in the class with which he or she entered college until the end of the third, or junior, year. At this time only those students who have credit for at least fourteen courses with a minimum of eighteen semester grades of C— or better are promoted to the senior class.

Probation. Students with unsatisfactory grades are placed on probation. Failure of a student to remove himself from probation after two consecutive terms or three non-consecutive terms normally results in separation from college.

EXAMINATIONS

Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course.

Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

ATTENDANCE

Students are expected to be present on the first day of each term and to continue in attendance from day to day to the end of the term.

Attendance at a fortnightly college assembly is required, except in the case of part-time and special students.

Regulations applying to absences from scheduled class meetings and laboratory exercises are based upon the conviction that such absences, regardless of their cause, involve a loss to the student and a drag upon the class. Students are, accordingly, expected to be consistently regular in attendance. Subject to this general provision, students are given a considerable degree of freedom in the control of their attendance. It is expected that such freedom will not be abused, and that it will contribute to the growth of each student's sense of responsibility.

Special regulations apply to attendance at assembly and physical education.

Honors

The colleges award "annual honors" to outstanding students in each of the three lower classes, and grant the bachelor's degree with distinction under the conditions described below.

ANNUAL HONORS

First honors and *second honors* are awarded at the end of each year to members of the freshman, sophomore, and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree is awarded *cum laude*, *magna cum laude*, and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A program leading to a bachelor's degree with honors in a particular subject may be undertaken by a student at the beginning of the junior year. This opportunity is open to candidates for either the degree of Bachelor of Arts or Bachelor of Science in Business Administration. Under this plan the department appoints an honors' adviser who cooperates with the student in working out a unified program of courses for the junior and senior years. This program may include a maximum of two "honors courses" in which he works with a large measure of independence under the supervision of the adviser. In the senior year each candidate must pass satisfactorily a comprehensive examination given by his major department.

Any student may apply in writing to his major department for permission to take honors work, not later than the first day of May in the sophomore year. The approval of the department is necessary for admission to such work. In exceptional cases, application may be made and admission approved by the department concerned up to the end of the first semester of the junior year, but only with the consent of the College Board.

Admission to candidacy for departmental honors does not relieve a student from any of the standing regulations of the college except as specifically stated above. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to his department. If candidacy is terminated for any reason, the amount of credit to be allowed for "honors courses" will be determined by the College Board in consultation with the major department.

On conclusion of the honors program, including a comprehensive examination, the department may recommend the student's graduation with honors, high honors, or highest honors. Only students meeting the standards of the College Board for the degree *cum laude* may receive departmental recommendation for high or highest honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies—those studies concerned principally with a knowledge, understanding, or appreciation of the natural and social world in which we live. The Society establishes chapters in colleges and universities throughout the United States where the curricula are broadly cultural in scope and where high standards of scholarship are maintained.

In harmony with the underlying purposes of the Society, the Clark chapter, Lambda of Massachusetts, established in 1953, seeks to foster among undergraduates an appreciation of the contributions to culture and civilization which have been made by liberal studies.

Each year the Chapter elects to membership a limited number of juniors and seniors whose programs have been definitely liberal in character and who have achieved distinction in scholarship.

As a result of the installation of a chapter of Phi Beta Kappa at Clark University in 1953, the Clark Scholarship Society, organized in 1914, became inactive and assumed the status of an alumni organization.

Student Aid

Scholarships and loans are provided by the university from endowed and unendowed funds. A limited amount of part time employment is available in the various offices and departments of the University.

Many scholarships and loans are available from various sources in communities throughout the nation. Inquiries should be addressed to school officials, churches, fraternal organizations, chambers of commerce, etc.

SCHOLARSHIPS

Scholarships are awarded on the basis of financial need, character, and ability. They vary in amount and some are restricted to definite localities or to particular subjects.

To be eligible for a scholarship, an entering freshman should have a scholastic record which places him in the upper third of his preparatory school class. A college student is eligible if he has secured a rank in the upper half of his class for the preceding semester.

Scholarships are awarded at the beginning of each semester. Ordinarily an award for the first semester is continued through the second semester if the holder maintains a position in the upper half of his class for the first semester.

Applications for undergraduate scholarships should be filed at an early date on forms which may be secured from the college office.

Incoming freshmen applying for scholarship aid do so through the College Scholarship Service, Box 176, Princeton, New Jersey (or Box 27896, Los Angeles 27, California, for the West Coast). The service provides the University with an independent analysis of the applicant's financial needs. Application forms may be obtained at the student's secondary school, or from the Director of Admissions.

The following scholarships are currently available from university funds.

The Ellis-Hubley Competitive Scholarships. These are competitive scholarships restricted to male residents of Worcester (or

neighboring towns) who have graduated from Worcester (or neighboring towns) secondary schools. Full tuition plus a stipend is awarded annually to the beneficiary from the income of funds bequeathed in memory of Gordon A. Hubley, Clark, 1910, and of Theodore T. and Gary G. Ellis.

One appointment is made each year to a member of the freshmen class and the award is normally continued throughout the four years of the college course. Two other full tuition scholarships are awarded annually to applicants who, in the judgment of the Committee on Scholarships, stand next below the successful applicant.

A candidate must receive the recommendation of the Principal or Head Master of the school in which his preparation for college is completed before his application can be considered.

The Jonas G. Clark Scholarships. These scholarships have been established by the trustees to provide financial aid for undergraduate male and female students.

The Theodore T. and Mary G. Ellis Scholarships. These scholarships provide financial aid for male or female residents of Worcester and Worcester County.

The Sanford Memorial Scholarship. The Sanford Memorial Fund was established by alumni of the University in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920. The Fund provides an annual scholarship for a male senior undergraduate.

The Livermore and Ambulance Scholarship. The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, the first Clark man to fall in battle in the first World War, and of his companions in the Clark Unit of Ambulance Drivers. This scholarship is for male students who are residents of Worcester County.

The Henry A. Willis Scholarships. Male students from Fitchburg, Massachusetts, and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community, grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship. A fund, established by the late Professor Charles B. Randolph in memory of his mother, provides scholarships restricted to male college students.

The Charles B. Randolph Fund. This fund is restricted to male students, preferably those whose major is a foreign language.

The Alice Friend Newton Memorial Scholarship. This scholarship provides full tuition for a student in the Women's College whose major is psychology.

The William Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his father. The income of this fund is available preferably for male students of the Protestant faith.

The Jennie L. Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his mother. The income of this fund is available preferably for female students of the Protestant faith.

The B'nai B'rith Scholarship. The Worcester Chapter, Order of B'nai B'rith, provides a scholarship which is primarily but not exclusively for the aid of Jewish students.

The Clark University Faculty Women's Club Scholarships. These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Aaron Fuchs Memorial Scholarship Fund, given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons Lawrence and Jerome Fox of the classes of 1944 and 1953 respectively, provides scholarship aid for non-residents of Worcester or of Worcester County.

The Reginald Bryant Allen Fund. The income from this fund is to be awarded annually to a deserving student majoring in mathematics.

The Alumni Group Scholarship. One full tuition scholarship to an accredited freshman is awarded from a fund set up by the trustees and the first three classes to graduate from Clark College, 1905, 06, and 07.

The Charles W. and Annie L. Bruninghaus Fund. The income from this fund, established in 1957, provides scholarship aid to undergraduates.





The Levi Knowlton Fund. A bequest of Mary H. Nixon in honor of her father, Levi Knowlton, to provide scholarship aid to undergraduates.

The Abraham Persky Scholarship Fund. The income of this fund is used to assist deserving undergraduates.

Pleiades Scholarship. This scholarship is awarded annually to a member of the Women's College on the basis of active citizenship, scholarship, and financial need from funds raised by Pleiades, Senior Women's Honorary Society.

Scholarships are also provided by the following organizations.

The Probus Club Scholarship. This scholarship is supported by the Probus Club of Worcester.

The National Council of Jewish Women Scholarship. The Worcester section, National Council of Jewish Women, awards a scholarship each year to a Jewish student of the Women's College who resides in Worcester County.

The High School Basketball Tournament Scholarship. The receipts of the High School Basketball Tournament held annually at Clark University provide assistance to male undergraduates.

The Art Museum Scholarship. This scholarship is available to Worcester Art Museum Students to pursue studies at Clark University.

Many other scholarships are provided by such organizations as the Travelli Foundation, General Motors Corporation, various parent-teacher associations, church groups, etc.

LOANS

The following loans are available to undergraduates.

The Alumni Loan Fund was established by the trustees and the alumni.

The May S. Rogers Loan Fund is available to undergraduates who need loan assistance.

The Haskell Talamo Loan Fund has been established by relatives and friends of the late Doctor Haskell Talamo, A.B., Clark University, 1916.

The Louis N. Wilson Fund, established by the first librarian of Clark University, is a loan fund for male students in the college.

National Defense Student Loans. These loans are available to students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics, or a modern foreign language.

Applications for all of the above loans should be made at the office of the Bursar.

Student Services

DINING HALL

The University Dining Hall is operated for the convenience of the students and staff of the University. Service is cafeteria style.

Undergraduates who do not live at home are required to eat at the Dining Hall. This fact must be recognized and subscribed to by all who seek admission to either the Men's College or the Women's College. Other members of the university are welcomed on a permanent basis or for single meals.

DORMITORIES

Men not living in their own homes or with near relatives are required to live in the men's dormitory or in fraternity houses.

Rooms are reserved on receipt of the dormitory deposit fee. The deposit is later applied to room rental charges.

Women students not living in their own homes or with near relatives are required to room in the dormitory facilities. Other arrangements are permitted only on written request from a parent or guardian and the consent of the Dean of Women.

A Dormitory Council composed of student representatives, Housemothers, and the Dean of Women meets regularly to discuss matters pertaining to dormitory living.

Room reservations and deposit procedures are the same for women's and men's dormitories.

INFIRMARY

The Infirmary, located at 6 Downing Street, opposite the University Library, is open during the academic year. Both a nurse and university physicians are in attendance. Facilities are provided for the treatment of emergencies and for minor medical services to all students while they are on the campus; in addition, there is provision for the temporary hospitalization of resident students in cases of more serious illness.

No special fee is charged for the health services available at the Infirmary. A student has the option of subscribing to a low-cost health and accident insurance, which will cover other medical contingencies. The insurance fee is \$16.00, for a full year.

GUIDANCE AND PLACEMENT BUREAU

JAMES M. COFFEE, Ed.D., *Director*

The guidance service provides individual counseling on problems concerned with planning a vocation, and on problems of adjustment to college life. This service supplements the advisory services of the individual teachers and deans.

The placement service assists the student in job exploration. The service informs the student of available positions and arranges interviews with representatives of organizations in business, government, and education. Students are urged to establish a permanent personal reference file. The bureau provides the forms for those papers which are kept on file and are available for the student's use at any time before or after graduation.

Part-time employment opportunities are also listed with the bureau for students who wish to work in order to help meet college expenses.

PSYCHOLOGICAL CLINIC

In 1950 the Department of Psychology instituted the Clark University Psychological Clinic for the purpose of providing testing and counseling services to students of the college who wish help in their academic or personal adjustment. Where indicated, other more appropriate university or community resources can be recommended to the student.

The staff of the clinic includes the director, Dr. Robert W. Baker, other clinical psychologists in the Department of Psychology, and consultants in psychiatry, psychiatric social work, and clinical psychology.

Student Activities

Student life at Clark is, as would be expected at a small institution, friendly and informal. Fixed rules and regulations are few, the assumption being that students will conform to the recognized standards of morality, good order, and consideration for others. College activities are under the minimum degree of faculty oversight which is necessary to insure responsibility in business dealings and consideration of the welfare of the individual student and of the college community.

Opportunities for recreation are found in dramatic clubs and musical clubs, under expert direction; in editing and publishing the college newspaper (*The Clark Scarlet*), the literary magazine (*Helicon*), and the senior yearbook (*Pasticcio*); and in such organizations as the Debating Council and International Relations Club.

Formal "proms," informal "Bohemes," and fraternity activities furnish further opportunities for social life. Jefferson Hall, newly-opened student center, contains a student lounge, recreation room, bookstore, student mailboxes and snack bar. The Jefferson Hall lounge, plus a lounge in Clark Hall, provides meeting places for formal or informal groups. For many students, the most prized opportunity for social contacts is in the offices and laboratories, where members of the faculty may be visited with ease and freedom.

The Men's and Women's Senior Honor Societies, Gryphon and Pleiades, select each year from the junior class a group of outstanding men and women who constitute the membership of the societies for the following year. The societies play an important part in campus life and in maintaining the traditions of the college. Among the regular functions of Gryphon are the supervision of the annual

"rope pull" between the freshman and sophomore classes and the management of "Spring Spree Day." Pleiades sponsors the Christmas tea and an annual lecture, assists at general college social functions, and in recent years has provided scholarship aid to one or more women students.

The Scarlet Key is a sophomore-junior service organization. In addition to acting as guides for campus visitors, Scarlet Key members undertake various activities and projects beneficial to the university.

The Activities Fee. Non-athletic activities are partially supported by an activities fee. This fee also admits a student, without additional charge, to all athletic contests held on the college grounds, provides him with the college newspaper and yearbook, and admits him to plays and concerts presented by the dramatic and musical clubs.

Eligibility for Non-competitive Activities. All students may participate as long as their scholarship proves satisfactory. Details are published in the Students' Handbook.

Physical Education and Athletics

PHYSICAL EDUCATION

Physical education is required of all students for the general promotion of their health and mental efficiency. Three years of physical education, two hours per week, is a prerequisite for graduation. Physical education is scheduled at times which avoid conflict with recitation hours. Students are excused from this requirement only on the recommendation of the medical director.

The physical education programs for both men and women are closely correlated with intra-mural sports. The physical education program for women requires, during each of the three years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing, and modern dancing are offered. Swimming and life saving courses are available in cooperation with the Young Women's Christian Association and the American Red Cross aquatic course.

ATHLETICS

THE MEN'S COLLEGE. Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf and crew. Competent coaches have immediate supervision over the athletic teams. In addition to the program of intercollegiate athletics there is an extensive program of intra-mural sports.

Eligibility for Competitive Activities. Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure.

Any student carrying less than a full program of studies is ineligible unless his reduced program permits graduation at the end of the year in which that program is carried.

A student transferring with advanced standing from another four-year college is ineligible, for one calendar year from the date of registration at Clark, to participate in any varsity sport in which he participated at the previous institution.

A special student is normally not entitled to participate in competitive activities of the college. The College Board may, however, permit such participation in the case of a special student who is enrolled for a program of five courses.

THE WOMEN'S COLLEGE. Students in the Women's College have the opportunity of participating in several types of athletics. Offered in the fall and spring are hockey, crew, archery, tennis, fencing, softball, and golf. Tournaments are held in the spring and fall and a cup is awarded to the winner of each event. During the winter months basketball is the principal organized athletic activity; volleyball and badminton are also offered. Women students use their own gymnasium for practice, but have the use of the University Gymnasium for games with outside organizations.

The Women's Athletic Association arranges for all sports activities both within the college and with other colleges in the New England area.

GRADUATE SCHOOLS

The Graduate School

The Graduate School of Geography

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the university with an impressive record of accomplishments through the years. The Graduate Board, under the chairmanship of the president of the university, is the administrative organ of the Graduate School.

Today, the university continues to emphasize graduate education by offering to both men and women special facilities and advanced instruction required for independent study and research.

Programs leading to master's and doctor's degrees are available to qualified holders of a bachelor's degree or its equivalent of attainment.

MASTER OF ARTS degrees are offered in the fields of biology, chemistry, economics, education, geography, government, history, international relations, mathematics, physics, psychology, and sociology.

DOCTOR OF PHILOSOPHY degrees are offered in chemistry, economics, geography, history, international relations, and psychology.

Departments which do not at present accept candidates for graduate degrees, offer numerous courses, not listed above, which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information concerning the Graduate School of Geography is contained in the next section of the catalogue.

General inquiries and correspondence concerning the Graduate School should be addressed to:

The Secretary of the Graduate Board,
Clark University,
Worcester 10, Massachusetts.

Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the university. Admission to the school does not imply admission to candidacy for a degree.

Application. A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work, and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination, given by the Educational Testing Service, Princeton, New Jersey.

Applications for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in September. Applications may be submitted, however, at any time throughout the year and periodically are considered by the Graduate Board.

Admission. In granting admission, the Graduate Board may, with the advice of the department, prescribe a minimum period of residence, never less than one year, and other definite requirements, including courses in particular subjects, as prerequisites for a graduate degree.

Admission to the Graduate School is granted for entry only at a specified time, and lapses if the student fails to enter at that time. If, after an applicant has entered the university as a regular student, his period of graduate study is broken by more than a year, he must make formal application for reinstatement.

Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

THE DEGREE OF MASTER OF ARTS

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum

requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of master of arts at the discretion of the major department.

Candidacy. Application for admission to candidacy for a master's degree should be filed with the Secretary of the Graduate Board not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has:

1. Completed one semester of full-time graduate work or its equivalent in residence at this university;
2. Obtained the written endorsement of his major department;
3. Paid the diploma fee (\$5) and publication fee (\$10).

Candidacy for the degree of Master of Arts holds good through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course requirements. Each student must meet a minimum course requirement of five courses, or their equivalent in half courses. The program must be approved by the major department. One of the courses may be a research course devoted to the preparation of the thesis.

Thesis. The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it, approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the Commencement at which the degree is to be conferred. A second copy of the thesis, with a copy of the précis must be delivered to the major department. The précis must not exceed seventy-five words in length. The title page, précis, and academic

history forms are obtainable from the Registrar. The ribbon copy of the thesis must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The thesis is deposited by the Registrar in the university library. The précis is printed by the university in an annual publication.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department, and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

THE DEGREE OF MASTER OF ARTS IN EDUCATION

The residence, candidacy, course, and examination requirements are basically the same as those listed for the master of arts degree.

Thesis. Students may choose one of the following options, subject to the approval of the Department of Education:

- (1) Prepare a thesis or special report, as required for the M. A.
- (2) Elect two additional semester courses in subject matter fields.
- (3) Elect a two-semester, or double, seminar in which papers are prepared and presented to fellow students and staff.

For further particulars, see the announcement of the Department of Education.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation, and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of doctor of philosophy.

Residence. The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence, broadly defined as graduate work done at Clark University under the immediate supervision of at least one member of the university faculty.

If the master of arts degree has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the doctor of philosophy degree, four courses, or the equivalent in half-courses, is a normal full-time program.

Requirements in foreign languages. A prospective candidate for

the doctor's degree is advised to prepare himself early for the examinations in the reading of modern foreign languages. Usually the student must pass two language examinations. French and German are normally required; but the Graduate Board may authorize the substitution of another language for one of these, and a student's major department may require additional languages.

A department, under special circumstances and with the approval of the Graduate Board, may permit a student to substitute the following for the usual language requirements: (1) The passing of an examination in either French or German and, in addition, certification by the department that the candidate has demonstrated a working knowledge of the language in the departmental program; (2) The satisfactory completion of an additional program of studies in a field related to the major program.

The language examinations are conducted by a committee composed of representatives of the modern language departments and a representative of the student's major department. The results of the language examinations are reported to the Registrar by the language committee; the results of the substitute requirements are reported by the department. A student must fulfill the above requirements before he will be permitted to take the preliminary examination for the degree of doctor of philosophy.

Foreign students whose native tongue is not English may petition the Graduate Board, subject to the approval of the department concerned, to omit either French or German if both languages are not necessary for the field of concentration.

Candidacy. Applications for admission to candidacy must be filed not later than November first in any academic year by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has:

1. Completed two full academic years of graduate work (or its equivalent in part-time work), one of which must have been at Clark University;
2. Passed the required examinations in foreign languages, or completed satisfactorily a substitute program;
3. Passed a preliminary examination in his chosen fields of study;

4. Obtained the written endorsement of his major department;
5. Paid the diploma fee (\$25) and publication fee (\$30).

Candidacy for the degree of doctor of philosophy holds good through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation. A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate.

The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before the commencement at which the degree is to be conferred the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar. At the same time a second copy of the dissertation and of the abstract may be required by the major department. The title page, précis, and academic history forms are obtainable from the Registrar. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The Registrar deposits the dissertation and the abstract in the university library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Incorporated, of Ann Arbor, Michigan, and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*, which is widely distributed both in this country and abroad to subscribing libraries and leading abstracting services. The précis is printed in an annual publication of the university.

Final examination. The final examination is oral and lasts for at least two hours; additional written examinations may be given if the major department so directs. The candidate is expected to de-

fend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, including the chairman and one other member of the major department, a member of the Graduate Board under whom the candidate has done no work (unless such a member has participated in the preliminary examination of the candidate), and such other members of the Graduate Board as may be duly appointed. The president of the university is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS, AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided by the university from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the university. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Both outright grants and loans for educational purposes are provided in many sections of the United States by local foundations, fraternal organizations, civic groups, etc.

Graduate scholarships and fellowships are available for prospective candidates for all master's and doctor's degrees. Appointments are made on the basis of scholarly promise and seniority and on the recommendation of the departments. The number of appointments available at any department varies from year to year. Fellows and scholars are expected to cooperate with the staffs of the various departments, and may by mutual agreement undertake limited responsibilities. They are never called upon to perform services which would interfere with the completion of a full-time program of graduate study.

In a case where assistance in the department, either in research or teaching, is to be a duty of the fellow, an appointment may be designated as a research fellowship or a teaching assistantship. An

appointment of this nature is made on the recommendation of the department and with the consent of the applicant.

Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Board for final action.

According to an agreement between the members of the Association of American Universities, elections of fellows and scholars will be communicated on April first, but not before, to each successful candidate.

Stipends for graduate fellowships and scholarships are provided by the following funds:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the Board of Trustees.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester. The income of this fund is for the benefit of native born citizens of the City of Worcester.

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of doctor of philosophy, is for the benefit of students who are studying for that degree.

THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly is to help men who are enrolled in a course leading to the degree of doctor of philosophy.

Teaching assistantships are available in certain departments. These involve a specified amount of instruction with stipends which vary according to the amount of service agreed upon.

Assistantships are available in several departments. These positions involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Inquiries concerning any of the above types of appointment should be addressed to the chairman of the department concerned.

AID FOR GRADUATE STUDENTS

Student aid is available from the following funds, with the restrictions noted.

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

THE ELIZA D. DODGE FUND. The income of this fund is granted to graduate students of limited means who are engaged in research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

LOANS FOR GRADUATE STUDENTS

Loans are available for graduate students from the funds listed below. These loans bear interest at 3% per year.

Applications for loans should be made at the office of the Bursar.

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND was established in 1926 for the benefit of students in the Graduate School.

THE SARAH M. THURBER LOAN FUND was established by the late Dr. Charles H. Thurber, former president of the Board of Trustees as a memorial to his mother.

NATIONAL DEFENSE STUDENT LOANS

These loans are available to students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics, or a modern foreign language. Applications for loans should be made at the office of the Bursar.

The Graduate School of Geography

SAMUEL VAN VALKENBURG, PH.D., Professor; Director of Graduate School of Geography

RAYMOND E. MURPHY, PH.D., Professor; Editor of *Economic Geography*

RICHARD J. LOUGEE, PH.D., Professor of Geomorphology*

HENRY J. WARMAN, PH.D., Professor; Secretary of Graduate School of Geography

GUY H. BURNHAM, A.M., Instructor; Cartographer

ERWIN RAISZ, PH.D., *Visiting Professor*; Cartographic Techniques

J. W. BIRCH, PH.D., Visiting Professor; The University, Bristol, England

EARL B. SHAW, PH.D., Visiting Professor in Anglo-America Studies

SPECIAL LECTURERS, 1959-60

GEORGE B. CRESSEY, PH.D., Syracuse University

FRANKLIN C. ERICKSON, PH.D., Boston University

GEORGE F. CARTER, PH.D., Johns Hopkins University

CARLETON S. COON, PH.D., Anthropologist and archaeologist, University Museum, Philadelphia, Pa.

GRADUATE WORK IN THE SCHOOL OF GEOGRAPHY

The Graduate School of Geography offers qualified students advanced training in geography. The map collection, libraries, and special laboratories for cartography provide unusual facilities for research work in residence. All graduate students are encouraged to undertake independent field studies as part of their university work.

* Died May 16, 1960.

The staff specialists must spend part of their time in travel and field studies. While in residence, they offer regular courses of instruction and direct advanced research work. Special lecturers, both American and foreign, supplement the regular staff.

Read the preceding section, "The Graduate School," for general requirements. For course offerings see the Geography section of "Departments and Courses."

The degree of Master of Arts

Candidates will pass written examinations in at least six of the following fields: physiography, climatology, soils, biogeography, land utilization, economic geography, human and cultural geography, regional geography, political geography, and urban geography. Oral examinations for the master's degree cover four fields approved by the staff. The master's degree requires two years except for those whose preparation in fundamentals has been adequate to enable them to qualify in less time.

The degree of Doctor of Philosophy

Candidates are required to submit superior written examinations, and to pass a general oral examination covering six fields approved by the staff. The oral examination is scheduled after language requirements are fulfilled. In general, a year of work beyond the master's degree should prepare candidates for the general examination preliminary to acceptance as candidates for the doctor's degree and to work on dissertations.

Theses and Dissertations

The master's thesis must be submitted to the major professor at least three weeks before it is to be deposited with the Registrar. Theses must receive final approval of all staff members. Doctoral dissertations must be submitted at least four weeks before the completed copies are due at the office of the Registrar. Dissertations must be circulated first and then defended. Candidates submit the next-to-final drafts for staff circulation.

All dissertations are now reproduced in full on microfilm. Since maps and other graphic devices in color will not reproduce satisfactorily, it is recommended strongly that such features be done in black and white for the master copies of dissertations.

DISTINCTIVE FEATURES

In addition to location in a natural setting rich in physical attributes worthy of investigation, the Clark University Graduate School of Geography is within easy access of such research centers as Harvard and Yale Universities, cultural centers in Boston, and the American Geographical Society in New York.

The Clark Graduate School has become a traditional "port of call" for most professors of geography in this and other countries. Their stays may range from one hour to as long as six months or a year. Clark graduate students are privileged to visit with these leaders in the field of geography.

Graduate students are assigned desks and shelves in the Geography Workroom. Staff offices are located on the floor immediately above. Conferences are easily and frequently arranged. Both workroom and classroom have immediate connections with the periodical room and the open shelves of the library. The Libbey Library on the first floor serves for general conferences and seminars.

Each year the workroom group elects officers, who are responsible for the management of workroom activities. The officers also publish *The Monadnock*, which for thirty years has been circulated to the alumni of the Graduate School of Geography.

The professional magazine, *Economic Geography*, is edited by a staff member. Started at Clark University over a quarter of a century ago, it is the only magazine published in English that specializes in the economic phases of geography.

An outstanding feature of the Graduate School of Geography is the field camp of three weeks' duration at the beginning of the fall term. Resident prospective candidates for graduate degrees in geography attend the field camp. The program includes studies in physiography, land utilization, urban geography and weather, with special training in mapping and other field techniques. Following return to the campus, about ten days are allowed for the completion of field reports. Formal course work begins on the second Monday after the close of the field camp.

Formal course work in geography ends about May 1st, giving students free time in which to read and coordinate their work prior to the examination period.

SPECIALIZATION

There are certain basic courses that graduate students in geography take. However, the increasing complexity of world problems makes it impossible for anyone to become proficient in all phases of geography. In recognition of this, candidates for the doctor's degree are encouraged to specialize. The specialty depends upon the interests of the student.

STUDENTS' FEES

All geography students in residence pay, in addition to the general university fees, a camp fee, a workroom fee, and a classroom materials fee.

The camp fee, determined on a cost basis, varies between \$50 and \$80. It is payable to the camp director on or before the first day of camp. It covers camp tuition, board and lodging, transportation, maps, drafting supplies, and the use of meteorological instruments and other equipment.

The workroom fee, \$5 a semester, is payable to the department November first and March first. It helps to maintain the geography workroom and equipment used by graduate students—alcove desks, files of maps, card catalogue, adding machine, darkroom facilities, drafting tables and instruments.

The classroom fee, \$5 a semester, is payable to the department November first and March first. It is for mimeographing and for the maintenance, in part, of the classroom wall maps and other equipment.

THE SUMMER SCHOOL

The Summer School

ROGER C. VAN TASSEL, *Director*

The Clark University Summer School offers a unique opportunity for summer college study in Central Massachusetts. Intensive instruction in numerous fields is offered in the intimate and pleasant atmosphere of a small university.

During 1960 the three-week Intersession met from June 6 to 25 and the regular summer session from June 27 to August 12. A preliminary announcement of the 1961 Summer School program should be available about February 1. The Summer School issue of the CLARK UNIVERSITY BULLETIN is published shortly thereafter.

The Summer School was revamped in 1955 to offer a larger variety of courses to undergraduates, graduate students and teachers, and to permit students to obtain a larger number of academic credits. The Intersession, a three-week period of concentrated study, and the Summer Session permit the student to take three semester courses (9 semester hours of credit). Evening courses are scheduled permitting students to continue their education during the summer while engaged in day-time employment.

To broaden his intellectual horizons the student is also encouraged to engage in informal afternoon seminars, conferences, to take week-end excursions to famous New England cultural centers and to participate in the various social events.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward baccalaureate degrees, unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the chairman of the department concerned.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages and occasionally other subjects, which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration.

COURSES OFFERED

The following courses were offered in 1960 and are listed here as a typical example of the programs of study available at the Intersession and Summer Session:

BIOLOGY

- S. 11a General Biology—The Plant Kingdom
- S. 17 General Ecology
- S. 262 Instrumental Procedures in Biological Investigations
- S. 370 Research in Biology

BUSINESS ADMINISTRATION

- S. 16 *Business Statistics
- S. 17 Public Speaking
- S. 150a Principles of Marketing
- S. 154b Retailing Principles
- S. 184 Management-Labor Relations

ECONOMICS

- S. 13 Money and Banking
- S. 140b Consumer Economics
- S. 229 Economics of Transportation
- S. 28 Research in Economic Problems

EDUCATION

- S. 208 Methods and Materials in Secondary Education
- S. 228 Guidance and Evaluation
- S. 290b Philosophy of Education

ENGLISH

- S. 11a English Composition and Literature
- S. 11b English Composition and Literature
- S. 12 Public Speaking
- S. 106 Contemporary American Fiction
- S. 120 Introduction to Literary Criticism
- S. 125 The Short Story
- S. 143a Modern British Fiction

FINE ARTS

- S. 12 Introduction to Music
- S. 195 Introduction to Contemporary Art

* Double course.

GEOGRAPHY

- S. 12a Introduction to Weather and Climate
- S. 191 Cartography
- S. 291 Cartography
- S. 300 Research in Geography

HISTORY AND GOVERNMENT

- S. 130a Political History of the United States
- S. 221a England in the Twentieth Century
- S. 230b Social and Intellectual History of the United States
- S. 231 American Colonial History, 1607-1775
- S. 251a American Political Parties
- S. 255 The Constitution and Civil Liberties
- S. 300 Reading and Research in History and Government

LANGUAGES

- S. 10 Elementary French Refresher
- S. 12 *Intermediate French
- S. 14 *Readings in French Literature
- S. 11 *Introductory German
- S. 12 *Intermediate German
- S. 11 *Introductory Spanish

MATHEMATICS (NSF Institute)

- S. 201 *Fundamental Concepts of Mathematics
- S. 221 *Introduction to Calculus
- S. 214 *Advanced Calculus, Introduction to Analysis

PHILOSOPHY

- S. 112 Problems and Trends in Contemporary Philosophy
- S. 119 Basic Issues in Philosophy: The Idea of God
- S. 290b Philosophy of Education

PSYCHOLOGY

- S. 11a General Psychology
- S. 103b The Abnormal Personality
- S. 172a Theories of Personality
- S. 204b Personality Evaluation
- S. 350 Research in Psychology

SOCIOLOGY

- S. 11b Sociological Analysis
- S. 12a Introduction to Cultural Anthropology

* Double course.

THE EVENING COLLEGE

The Evening College

THOMAS J. DOLPHIN, *Director*

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, The Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the Bachelor of Science degree in either General Studies or Business Administration. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults.

Finally, as a community service, The Evening College organizes frequent non-credit short courses, institutes and seminars tailored to the specific needs of various civic, professional and business groups. Requests for information regarding such services should be addressed to the Director.

ADMISSION TO INDIVIDUAL COURSES

In general, admission to individual courses in The Evening College is open to all interested adults seeking to further their education. High school graduation, though not required, is desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

DETAILED INFORMATION

Detailed information about The Evening College is contained in the special catalogue available from the Director, The Evening College, Clark University, Worcester 10, Mass. Catalogues are issued in advance of registration for the Fall and Spring semesters.

ADMISSION TO FORMAL PROGRAMS OF STUDY

Adults applying for a formal program of study in The Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded directly to The Evening College on forms which will be supplied upon request by the College. Adults who have attended other colleges should request that official transcripts be forwarded directly to The Evening College of Clark University, 950 Main Street, Worcester 10, Massachusetts.





DEPARTMENTS AND COURSES

Interdepartmental Majors

General Education

Biology

Business Administration

Chemistry

Classics

Economics and Sociology

Education

English

Fine Arts and Music

Freshman Orientation

Geography

Geology

German

History, Government, and International
Relations

Mathematics

Philosophy

Physics

Psychology

Romance Languages

DEPARTMENTS AND COURSES

Departments and important subdivisions of departments and certain interdepartmental groups of courses are listed in the following pages. Interdepartmental Majors and General Education are listed first. Departments follow the first two entries in alphabetical order. Departmental announcements contain important general information, as well as regulations concerning graduate work and statements of the requirements for undergraduate majors.

The announced courses of instruction are subject to any modification which may become necessary.

COURSE NUMBERING SYSTEM

A number, unmodified by "a" or "b," indicates a year course continuing through the two semesters of an academic year. A number followed by an "a" refers to: half course, first semester; a number followed by a "b" means: half course, second semester.

A two-semester course is divisible unless an explicit statement of indivisibility appears in the course description. Those courses noted as "indivisible" require the successful completion of the first semester as a prerequisite to entering the second semester, and ~~no~~ credit is ^{not} granted unless both semesters are satisfactorily completed. (for the first semester)

Courses are, in general, arranged in sequence so as to progress from the elementary to the advanced. In those departments which offer work at the graduate level, courses are classified under three headings as follows:

PRIMARILY FOR UNDERGRADUATES, designated by numbers beginning with the figure "1."

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS, designated by numbers beginning with the figure "2." Open to juniors and seniors with the consent of the instructor.

PRIMARILY FOR GRADUATE STUDENTS, designated by numbers beginning with the figure "3."

In the departments offering only undergraduate work, course numbers begin with the figure "1." Business Administration, an exception to the rule, has some course numbers beginning with the figure "2."

Interdepartmental Majors

The faculty has authorized "interdepartmental majors" in order to provide a broader study of certain fields than can be fitted into any departmental program, while yet preserving the unity of subject essential to a major.

An interdepartmental major includes eight or more required courses.

At present two programs are offered under this plan. These are:

I. INTERNATIONAL RELATIONS

Freshman and Sophomore Years

General Educ. 14
Economics 11
Geography 10
Government 14

Europe and the United States since 1500
Principles of Economics
Principles of Geography
International Relations

Junior and Senior Years

Government 240
Government 241
Geography 201
Economics 207
Economics

Seminar in International Relations
International Law and Organization
Political Geography
International Economics
One-half course to be selected

Instructor in charge: Mr. Hayden

II. AMERICAN CIVILIZATION

Freshman Year

General Educ. 14

Europe and the United States since 1500

Sophomore Year

At least two of the following courses:

Government 15
Economics 11
Sociology 11

Introduction to Government
Principles of Economics
Principles of Sociology

Junior and Senior Years

History 230	Social and Intellectual History of the United States
English 111	A Survey of American Literature
History 23b	Approaches to American Civilization

Two courses chosen from the following list:

Government 251a	American Political Parties
Government 254b	American Constitutional Law
History 234a	American Diplomatic History
History 235a	The United States in the Twentieth Century
History 236a	American Political History 1828-1877
Philosophy 12	History of Philosophy
Philosophy 18b	History of American Philosophy
Sociology 15a	Social Institutions
Sociology 29b	Advanced Sociological Theory

Alternative courses may be chosen with the approval of the instructor in charge of the program.

Instructor in charge: Mr. Grob.

General Education

Courses in General Education are distinguished from courses which are listed in departmental announcements by point of view and breadth of approach rather than by content. They offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of culture where he has no expectation of attaining professional competence. General Education courses are thus a valuable supplement to the major program. They are outside the sequence of courses in a student's "major" or "field of special interest" and are generally without specific prerequisites.

The following courses are classified for administrative purposes in Group A or Group B or Group C. They may be used to meet college requirements wherever a particular Group is specified in the "Freshman Programs" or in the "Requirements for a Bachelor's Degree."

Courses in General Education

10. **An Introduction to Physical Science.** [Not offered 1959-60]

This course covers fundamental and outstanding developments of both classical and modern physics and includes selected topics from chemistry and astronomy. The methods and procedures of science as exemplified by physics are emphasized, and considerable attention is given to historical background and the effect of science on man's thought and life. The laboratory periods are devoted to demonstration, discussion, criticism and evaluation, and to a series of selected experiments which are carried out by the students. No attempt is made to develop special competence in laboratory techniques. Open to freshmen. Primarily for non-science major. Classified as a Group A course. May not be counted for credit with Physics 11.

MR. ROOPE

14. **Europe and the United States Since 1500.**

Political, economic and intellectual trends since the Renaissance. The first semester treats the sixteenth, seventeenth, and eighteenth centuries; the second semester, the nineteenth and twentieth centuries.

A class fee of one dollar for each member of the class is charged for supplies and duplicate library copies of books. Open to freshmen. Classified as a Group B course. First semester: MR. LEE assisted by MR. ALLEN; Second semester: MR. LEE and MR. GROB assisted by MR. ALLEN.
Mr. Lee and Mr. Campbell, 1960-61

17. **Major British Writers.**

Unlike the conventional survey course which tries to present a comprehensive view of English literature from *Beowulf* to the present, this course focuses the attention on six or seven major writers in each semester. The emphasis is placed, not on tracing literary movements or on studying literary problems *per se*, but on showing what these great figures have to say that is of interest or importance to the general reader today. The course seeks to determine the attitude toward life of each author, to see what gave rise to that attitude, and to evaluate it and compare it with the views of other writers treated in the course. Chronology as well as other purely factual material is kept to a minimum.

Meets requirement for a third semester of English in addition to English 11. Open to sophomores, juniors, and seniors. Classified as a Group C Course.

MR. CARTER, FIRST SEMESTER
MR. SULTAN, SECOND SEMESTER

18. Literature and the Nature of Man.

The course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products.

The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society, but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative.

The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation.

Meets the requirement for a third semester of English in addition to English 11, but not the requirement in Fine Arts. Classified as a Group C course. Open to sophomores, juniors, and seniors with the consent of the instructors. Successful completion of first semester is normally required for admission to second semester.

MR. KING AND MR. ANDERSON

115. Man and Language.

An introduction to the analysis of the nature and function of human language: its role in the life of individuals and societies. What is language? What is the relation between language and thought? Does our language partially determine how we perceive the world? Why do languages change, and how? Is communication the primary function of language? How does language bind social groups together? How are the world's languages related to each other? Why don't we have a world language?

The course is designed (1) for the general student who wishes to know more about the nature of the uniquely and universally human institution of language; (2) for the student of such fields as psychology, sociology, anthropology and philosophy who wishes to explore the importance of language to his own field; and (3) for the student or teacher of English or foreign languages who is interested in the light which linguistic science can give upon the relations between his field and other areas of life and knowledge.

MR. REID

American Civilization

An "interdepartmental major" in the field of American Civilization is offered to candidates for the degree of Bachelor of Arts. The program required for the completion of this major is fully outlined under the heading *Interdepartmental Majors*.

Department of Biology

PROFESSOR NUNNEMACHER, ASSOCIATE PROFESSOR (AFFILIATE)

TRUANT, ASSOCIATE PROFESSOR (AFFILIATE) ROSENKRANTZ,

ASSISTANT PROFESSOR REYNOLDS, ASSISTANT PROFESSOR

CAMOUGIS, ASSISTANT PROFESSOR AHMADJIAN,

RESEARCH ASSOCIATE GATES

UNDERGRADUATE WORK

The department strives to aid the student in obtaining a broad yet thorough knowledge of the field of biology, to acquaint him with the major areas, methods, and tools of biological research and to encourage him to continue his own studies to the limit of his abilities. The best students are encouraged to undertake honors work including a senior course in which they are expected to carry out their own investigation of a special problem.

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department. An undergraduate majoring in biology must complete Biology 11, three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11, and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count towards the fulfillment of the major requirements.

Two typical programs of study are presented, but both are subject to considerable modification depending upon the individual student's interests. Choice of program should be governed by the ultimate professional goal of the individual student. Program A would meet the needs of a student preparing for a career in medicine or dentistry. Program B is recommended for the exceptional student who is particularly interested in modern biological research.

PROGRAM A

First Year

General Biology 11
 English 11
 Foreign Language
 Mathematics 11
 Division B

Second Year

Biology (2 semesters from 12a,
 14, 120b, 130a)
 Foreign Language
 Division B
 English (1 semester)
 Fine Arts (1 semester)
 Chemistry 11

Third Year

Biology (2 semesters)
 Chemistry 13
 Physics 11
 Foreign Language
 Elective

Fourth Year

Biology (2 semesters from 240a,
 242b, 249b, 231b)
 Electives (4 courses)

PROGRAM B

First Year

General Biology 11
 English 11
 Foreign Language
 Mathematics 11
 Chemistry 11

Second Year

Biology (2 semesters from 12a,
 14, 120b, 130a)
 Foreign Language
 Division B
 Chemistry 13
 Physics 11

Third Year

Biology (2 semesters from 240a,
 242b, 249b)
 Foreign Language
 Mathematics 12
 Chemistry 17 & 170
 Fine Arts (1 semester)

Fourth Year

Biology 260 (Special Problem)
 English (1 semester)
 Division B
 Biochemistry 218
 Electives (3 semesters)

GRADUATE WORK

Graduate instruction has been offered by the Biology Department since the founding of the university in 1887. At present a small number of students may work towards the Master of Arts Degree in specialized phases of botany, zoology, physiology and bacteriology. The department stresses a firm foundation in general biology and allied fields and the development of the critical judgment and work habits so necessary in teaching and independent research.

Admission as a candidate for an advanced degree in the department presupposes adequate preparation in the basic sciences, an over-all undergraduate academic record of B or better and satisfactory standing in the graduate record examination. The program usually requires two full academic years and involves the completion of five full graduate courses and an acceptable thesis.

Graduate assistantships and scholarships are available in limited numbers.

Courses in Biology

During the academic year 1959-60, the following courses were given: 11, 12, 14, 120b, 123b, 130a, 221a, 240a, 241b, 260, 300, 350, 360.

PRIMARILY FOR UNDERGRADUATES

11. General Biology.

The fundamental principles and problems of biology. One laboratory period per week. Divisible course upon approval by the department. Open to freshmen.

MR. AHMADJIAN AND MR. NUNNEMACHER

12a. Comparative Anatomy.

The morphology of the vertebrates from a comparative standpoint which traces the evolution of animals from fish to mammals. Two lectures and two laboratory periods per week, first semester.

MR. NUNNEMACHER

14. Botany.

First semester, morphology, and taxonomy of the lower plants. Special emphasis is given to the algae and fungi. Second semester, systematic botany of the higher plants with emphasis on our local flora. A collection of one hundred plants is required, also a spring program of laboratory work in the field of at least three days' duration. Either semester of the course may be elected separately. Prerequisite: Biology 11, first semester.

MR. AHMADJIAN

17b. General Ecology.

An introductory study of the distribution of plants and animals, their inter-relationships and adaptations to such a wide

1959-60
[Not offered, 1960-61]

variety of environments as the seashore, sand dunes, woodlands, and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during the laboratory period or on Saturday. Three lectures, one laboratory per week. Usually offered in the summer.

MR. NUNNEMACHER

18a. Genetics. [Not offered, 1960-61]

An introduction to the principles of genetics. MR. AHMADJIAN

120^b. Histology. [Offered 2nd sem., 1959-60, & 1960-61]

A comprehensive course dealing with tissue structure. Emphasis is placed on the study of mammalian tissues. Two lectures and two laboratory periods per week.

MR. NUNNEMACHER

123b. Parasites and Parasitism.

[Not offered, 1960-61]

A survey of parasitic forms from both the animal and plant kingdoms with emphasis on the role of parasitism as a specialized mode of life. Three lecture and three laboratory hours a week. Prerequisites: Biology 11 and the consent of the instructor.

MR. REYNOLDS

130a. General Microbiology. [Offered as 230a in 1959-60]

A presentation of the major problems, phenomena and relationships encountered in the study of bacteria, viruses, molds, yeast and protozoa. The laboratory sequence is designed to acquaint the student with basic bacteriological techniques. Two lecture and six laboratory hours a week. Prerequisites: Biology 11, Chemistry 11 and the consent of the instructor.

MR. REYNOLDS

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

201. Advanced Systematic Botany.

[Not offered 1959-60 or 1960-61]

215a. Invertebrate Zoology.

[Not offered 1959-60 or 1960-61]

221a. Embryology.

[Not offered 1960-61]

A consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week.

MR. NUNNEMACHER

224a. Neuro-anatomy.

[Not offered, 1959-60]

Three lectures per week.

MR. NUNNEMACHER

231b. Bacterial Physiology.

[Not offered 1959-60 or 1960-61]

Topics and exercises selected to demonstrate the chemical and physical principles underlying bacterial activities. Two lecture and six laboratory hours a week. Prerequisites: Biology 230a, Chemistry 13 (the second semester of Chemistry 13 may be taken concurrently) and the consent of the instructor. Biology 240a is strongly recommended.

MR. REYNOLDS

240a. General Physiology.

An introduction to the physical and chemical phenomena underlying the functions which are common to living organisms. Prerequisites: Biology 11, Chemistry 11, Physics 11. Three lectures and one laboratory period per week.

MR. CAMOUGIS

241b. Endocrinology.

[Not offered, 1959-60]

A study of the roles of various endocrine mechanisms in mediating physiological activities. Open to students who satisfy the instructor as to their preparation. Three lectures per week.

MR. CAMOUGIS

242b. Comparative Animal Physiology.

[Not offered 1959-60 or 1960-61]

The more important physiological phenomena are treated comparatively throughout the animal kingdom. Prerequisites: Biology 240a or its equivalent. Two lectures and two laboratories per week.

MR. CAMOUGIS

249b. Neurophysiology.

[Not offered 1959-60]

The physiology of central and peripheral nervous systems, receptors, and muscles are considered in both vertebrates and invertebrates. Prerequisites: Biology 240a or its equivalent. Three lectures and one laboratory per week.

MR. CAMOUGIS

260. Special Problems.

Advanced semi-independent study of an approved topic under the direction of a member of the staff. Hours and credit to be arranged.

STAFF

S. 262. Instrumental Procedures in Biological Investigations.

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy will be carried out. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry, and radioactive tracers.

Offered in the summer.

MR. ROSENKRANTZ

PRIMARILY FOR GRADUATE STUDENTS

300. Readings and Research in Biology.

STAFF

350. Graduate Seminar.

STAFF

360. Thesis.

STAFF

Business Administration

PROFESSOR MELDER, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE
PROFESSOR NICHOLSON, ASSISTANT PROFESSOR BALKO, ASSISTANT

PROFESSOR SARACHEK, INSTRUCTOR MONIZ, LECTURER BREEN
Stephen J. Canner, Teaching Fellow in Economics

The Division of Business Administration

GEORGE E. HARGEST, *Acting Director*

GENERAL STATEMENT

The Division of Business Administration presents and supervises a four-year course of study leading to the degree of Bachelor of Science in Business Administration. The "core curriculum" is given cooperatively by the departments of Economics and Sociology, English, History, Government and International Relations, Mathematics, and the Natural and Physical Sciences.

General supervision of the program rests with the Administrative Committee representing the faculty. An advisory committee listed above assists in the formation of general policies.

A statement of the requirements for the degree of Bachelor of Science in Business Administration is found under the heading "Requirements for the Bachelor's Degree."

Students should note that the following Business Administration courses may not be counted for credit toward the degree of Bachelor of Arts: 104a, 152b, 154b, 156b, 172a, 174b, 176a, 202, 204b, 206, 253b, 254a, 274b, 281b.

Requirements for admission and the freshman program are covered in the general sections "Admission Information" and "Student Programs."

Transfer Students. Transfer students desiring to enter with advanced standing should consult advanced standing section under Admission Information.

THE BUSINESS ADMINISTRATION PROGRAM

Business today seeks its young recruits among those who give promise of being able to qualify for places of responsibility in management. While business still demands those who have command of certain technical skills, its broader outlook dictates that they shall also have a sound cultural education as well as training in the basic fundamentals of business.

The program leading to the Bachelor of Science degree in Business Administration is designed to provide fundamental skills in business as well as broad professional training. Breadth is assured by prescribing required courses in the basic "tool" subjects and in selected functional areas of business activity. Professional and technical specialization is assured by requiring the student to select one of the areas for concentration. Overspecialization, however, is prevented by limiting the extent of this concentration. The opportunity for cultural enhancement is available to the student by allowing him freely to elect part of his program among courses in the arts and sciences.

THE AREA OF CONCENTRATION

At the beginning of his sophomore year, the student is required to elect the area of concentration in which he is to specialize. Below are listed course programs for each of the areas presently available. The student is required to present at least four and no more than five courses in the elected area of concentration before he may graduate. For this purpose, no more than two half-courses with a grade of less than C— are acceptable.

Accounting

BA	100	Principles of Accounting
BA	102	Intermediate Accounting
BA	104a	Federal Tax Accounting
BA	202	Cost Accounting
BA	204b	Auditing
BA	206	Advanced Accounting

Economics

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking

Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	22	Labor Economics
Economics	205a	Intermediate Economic Theory
Economics	207	International Economic Policy
BA	120a	Corporation Finance
BA	276a	Managerial Economics

Finance

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking
Economics	15a	Public Finance
Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	25b	Fiscal Policy
Economics	26	Industrial Organization and Government Control
BA	120a	Corporation Finance
BA	121b	Investments

Marketing

BA	150a	Principles of Marketing
BA	152b	Advertising
BA	154b	Retailing
BA	156b	Wholesaling
BA	202	Cost Accounting
BA	252a	Marketing Research
BA	253b	Sales Forecasting
BA	254a	Sales Management
BA	255b	Marketing Policies
Ec	140b	Consumer Economics

Management

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	176a	Production Control
BA	202	Cost Accounting
BA	272	Management Policies
BA	275a	Organization Theory
BA	276a	Managerial Economics
BA	279a	The Managerial Revolution
BA	281b	Public and Employee Relations
BA	290	Analysis of Business Problems

Personnel Administration

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	182b	Personnel Management
BA	184	Labor Relations
BA	275a	Organization Theory
BA	285b	Human Relations in Industry
Ec	22	Labor Economics

THE BACHELOR OF BUSINESS ADMINISTRATION DEGREE

The Bachelor of Business Administration degree will be granted in June 1959 and June 1960, and possibly to some students in June 1961. Thereafter, only the Bachelor of Science in Business Administration degree will be conferred.

The requirements for the degree of Bachelor of Business Administration are as follows:

Required courses:

BA 100, BA 120a, BA 140, BA 150a, BA 160, BA 172a, BA 290, Econ. 11, Econ. 13a, Mathematics 11, English 11, English 12a, Government 15.

In addition to the above required courses the student should present 5 additional courses in Business Administration or in closely related subjects.

Courses in Business Administration

During the academic year 1959-60 the following courses were given: 100, 102, 120a, 121b, 140, 150a, 155b, 160, 170b, 182b, 184, 202, 254a, 255b, 275a, 276a, 290.

ACCOUNTING

100. Principles of Accounting.

The organization and use of financial records, with emphasis

on interpretation as well as on techniques of procedure. Required of all candidates for the degree of B.S. in B.A. Indivisible course.

1959-60 - MR. MONIZ

102. Intermediate Accounting.

1960-61 - Mr. Hargest, assisted by Mr. Canner

Generally accepted accounting principles and procedures and their application to asset, liability and proprietorship accounts. The analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is placed upon problem analysis and solution. Prerequisite: B.A. 100. Indivisible course.

MR. HARGEST

104a. Federal Tax Accounting. [Not offered, 1959-60 or 1960-61]

The legal and accounting fundamentals of federal income and social security taxes with major emphasis upon the preparation of returns. Prerequisite: B.A. 100.

202. Cost Accounting.

[Not offered 1960-61]

Basic principles of cost accounting are related to job order, process, estimated and standard cost systems. Costs for profit determination and for managerial control and decision making are considered. Offered in alternate years. Prerequisite: B.A. 102 or the consent of instructor.

MR. HARGEST

204b. Auditing.

[Not offered, 1959-60 or 1960-61]

After an analysis of the purpose and scope of the several classes of audits, the course deals with (1) professional ethics (2) auditing standards (3) internal control systems (4) audit procedures applicable to asset, liability and proprietorship accounts (5) the use of worksheets and the preparation of statements and reports. Prerequisite: B.A. 102.

206. Advanced Accounting.

[Not offered, 1959-60]

The theory and practice of accounting for branches, mergers, receiverships, estates and trusts, consolidated statements, budgets, municipal accounts, and other topics of an advanced nature. Offered in alternate years.

Prerequisite: B.A. 102.

MR. HARGEST

ECONOMICS AND FINANCE

See the announcement of the Department of Economics and Sociology for descriptions of Economics courses.

Economics 11. Principles of Economics.

Required for the degree of B.S. in B.A.

Economics 13a. Money and Banking.

Required for the degree of B.S. in B.A.

Economics 13b. Problems in Money and Banking.**Economics 15a. Public Finance.****Economics 140b. Consumer Economics.****Economics 21b. National Income Analysis.****Economics 22. Labor Economics and Labor Problems.****Economics 24b. History of Economic Doctrine.****Economics 25b. Problems in Public Finance.****Economics 26. Industrial Organization and Governmental Control.****Economics 29a. Economics of Transportation.****Economics 205a. Intermediate Economic Theory.****Economics 207. International Economics.****Economics 211b. Comparative Economic Systems.****Economics 231b. Economic History of the United States.****120a. Corporation Finance.**

The financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. Required of all candidates for the degree of B.S. in B.A.

MR. NICHOLSON

121b. Introduction to Investments.

Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions; relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment program and exchange operation. Prerequisite: B.A. 120a.

MR. NICHOLSON

LAW

140. Business Law.

The legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, property, sales, negotiable instruments and agency. Required of all candidates for the degree of B.S. in B.A. Indivisible course. MR. BREEN

MANAGEMENT AND PERSONNEL ADMINISTRATION

170b. Principles of Management.

The principles disclosed through a study of planning, organizing, directing, assembling resources, and controlling which apply equally to all fields of administration. Required of all candidates for the degree of B.S. in B.A. MR. SARACHEK

172a. Industrial Management.

[Not offered, 1959-60]

A survey of the techniques of the executive control of manufacturing operations with special reference to such fields as specialization of labor, expansion, control of factors of production, and internal organization.

MR. SARACHEK

176a. Production Control.

[Not offered 1959-60
1960-61]

The inter-relationship of production control with other control techniques. Topics to be discussed include production, forecasting, development and analysis, budgeting, scheduling, quality control, and coordination. The case study method will be employed. Prerequisite: B.A. 170b. MR. LEVENSON

182b. Introduction to Personnel Management. [Not offered 1960-61]

Emphasis is placed on integrating personnel management with the other areas of management. Representative topics studied include procuring, developing, maintaining and using an effective work force; communications; morale; and labor-management relations. Prerequisite: B.A. 170b.

184. Management-Labor Relations.

The subject matter of the course is management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment as regards problems of management in shop industrial situations and under the law of labor relations is

provided. Discussion and case methods are employed. Pre-requisite: Economics 11.

MR. MELDER

272b. Management Policies. [Not offered 1959-60; offered 2nd sem. 1960-61]

Actual problems of representative business concerns based on specific case studies: administrative coordination, business research, business policies, development of master plans and operating budgets, measurement of administrative effectiveness. Prerequisite: B.A. 172a. ~~Indivisible course.~~

MR. SARACHEK

275a. Organization Theory.

Basic principles of organization will be considered. Reference will be made to promotion, formal and informal organization, departmentalization, line-staff relationships, decentralization and centralization, communication and the organization's bargaining relations with other organizations. Prerequisite: B.A. 170b.

MR. SARACHEK

276a. Managerial Economics.

[Not offered 1960-61]

Economic concepts are analyzed and evaluated in terms of their applicability to the development of business policies. The criteria of usefulness are consistency of thought and measurability of the variables under consideration. Prerequisite: Economics 11.

279x. Managerial Revolution. [Not offered 1959-60; offered 1st sem. 1960-61]

The social implications of the emergence of a professional managerial class in modern corporate capitalism will be examined. Emphasis will be placed on the manners in which existing institutions and ideologies buttress the structure of corporate capitalism.

MR. SARACHEK

281b. Public and Employee Relations. [Not offered 1959-60; offered 2nd sem. only 1960-61.]

The company's relations with its employees, consumers, stockholders and the general public. Special emphasis will be given to the problems of communication.

MR. SARACHEK

290. Analysis of Business Problems.

The course is designed to integrate the principles covered in more specialized courses in Business Administration in order to bring business as a whole and its economic problems into perspective. Required of all seniors in the Business Administration program. Indivisible course.

MR. BALKO

MARKETING

150a. Principles of Marketing.

The efficiency, social implications, and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer. Required of all candidates for the degree of B.S. in B.A.

MR. BALKO
1959-60 or

152b. Advertising.

[Not offered 1960-61]

Advertising as a tool of marketing. Topics studied include the economic functions of advertising, advertising research, media selection, advertising organizations and testing.

MR. BALKO

154b. Retailing Principles.

[Not offered, 1959-60]

The retailer in our economy, the store and its organization, aspects of buying and selling, operating activities and personnel, and retail control. Offered in alternate years.

MR. BALKO

252a. Marketing Research. [Not offered, 1959-60 or 1960-61]

Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution. Prerequisites: Economics 11 and B.A. 160, or equivalent. Offered in alternate years.

MR. BALKO

253b. Sales Forecasting.

[Not offered, 1959-60]

Application of statistical procedure to the problems of predicting market demand and sales of the individual firm. Prerequisites: Economics 11 and B.A. 160, or equivalent. Offered in alternate years.

MR. BALKO

254a. Sales Management.

[Not offered 1960-61]

The organization and direction of the efforts of a sales force. This involves establishing a sales plan; placing the sales department in the company organization; formulating sales policies; organizing the sales department; recruiting, training, equipping, motivating and compensating salesmen; and measuring their performance. Prerequisites: B.A. 150a and B.A. 170b, or equivalent.

255b. Marketing Policies.

[Not offered 1960-61]

An analysis of how such forces as competition, demand, cost, distribution structure, and legislation affect marketing deci-

sions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion, and prices. Prerequisites: Economics 11 and B.A. 150a, or equivalent.

STATISTICS

160. Business Statistics.

Statistical methods and techniques applied to data drawn from the business community. The course includes sampling, statistical inference, estimation and decision making; correlation—linear, multiple and curvilinear; analysis of time series and index numbers. Prerequisite: Mathematics 11. Required of all candidates for the degree of B.S. in B.A. Indivisible course. *Note:* Students ranking high in Mathematics 11 may, with the consent of the Director of Division, meet the requirement for B.A. 160 by taking Economics 29a, *Statistical Methods*.
MR. HARGEST

Dietrich H. Heinert, Research Associate

Department of Chemistry

PROFESSOR MARTELL, PROFESSOR KEGELES, ASSOCIATE PROFESSOR

SUGIHARA, ASSOCIATE PROFESSOR NES, ASSISTANT PROFESSOR

TRACHTENBERG, ASSISTANT PROFESSOR NAKAMOTO,

PROFESSOR (AFFILIATE) DORFMAN

John L. Bethune, Research Fellow

UNDERGRADUATE WORK

Students who select chemistry as a profession should major in chemistry and should also prepare themselves in such allied fields as physics and mathematics. Those interested in the biological aspects of chemistry should also elect appropriate courses in biochemistry and biology.

The chemistry major program is arranged so that the student can be introduced to the various fields of chemistry at a rate commensurate with individual ability. The following are some representative curricula.

SUGGESTED CURRICULA FOR CHEMISTRY MAJORS*

(The following are one-year courses unless otherwise specified)

Year	Program A†	Program B‡
Freshman	Chem 11	Chem 11
	Phys 11	Engl 11
	Engl 11	Math 11
	Math 11	Group B Elective
	Foreign Language	Foreign Language

* The major program in chemistry consists of the courses: Chemistry 11, 13, 14a, 19, 190b, and one chemistry elective (5 courses); Physics 11; and Mathematics 12 (2 related non-chemistry courses). Students are also highly encouraged to take Math 13 and at least two years of German.

† Students in Program A are expected to have shown better-than-average ability and motivation prior to admission to this program. Those who do not do well during their first year will be transferred to Program B, substituting a Group B Elective for Physics 11. Those who do not do well during the second year will be transferred to Program B, substituting Fine Arts for Chem 14a.

‡ Students who do exceptionally well during the first two years (B— or higher in Chemistry 11 and 13 and Math 12) may transfer to the Two-Science Program, substituting Chem 14a for Fine Arts.

Sophomore	Chem 13	Chem 13
	Chem 14a (1 sem.)	Physics 11
	Math 12	Math 12
	Engl (1 sem.)	Foreign Language
	Foreign Language	Engl (1 sem.)
Junior	Group B Elective	Fine Arts (1 sem.)
	Chem 19	Chem 19
	Chem 190b (1 sem.)	Chem 14a (1 sem.)
	Math 13	Math 13
	Fine Arts (1 sem.)	Foreign Language
Senior	Foreign Language	Group B Elective
	Group B Elective	½ Elective
	Chem 215 (honors)	Chem 190b (1 sem.)
	4 Electives	4½ Electives

For professional work in chemistry, graduate study is highly desirable. Students who consider the possibility of later graduate study in chemistry are advised to secure a reading knowledge of German and either French or Russian in order to anticipate the requirements for higher degrees in most graduate schools.

Students who intend to enter the field of secondary education should acquaint themselves with the requirements in "education" of state and local licensing boards and prepare to meet these requirements. This may necessitate the omission of certain elective courses scheduled for the third and fourth years.

In many colleges, premedical students major in chemistry. The premedical programs are outlined in the announcement of the Department of Biology. The program which provides preparation for the study of physiology in medical school or in graduate school includes Chemistry 19.

Attention is called to laboratory fees and breakage deposits listed under the general heading "The Undergraduate Colleges" and the special heading "Fees and Expenses."

GRADUATE PROGRAMS

The Department of Chemistry offers advanced courses in the fundamental fields of chemistry, supplemented by specialized courses and research work in organic, inorganic, physical and nuclear chemistry, and biochemistry. The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides completion of certain required courses, candi-

dates for advanced degrees must show facility in conducting a laboratory investigation and demonstrate a command of the field of major research interest.

GRADUATE SCHOLARSHIPS, ASSISTANTSHIPS AND FELLOWSHIPS

Scholarships cover tuition, laboratory fees and supplies. Teaching assistantships are available which require not more than eight hours per week of the student's time, permitting full-time work in the degree program. Other assistance is available in the form of predoctoral fellowships sponsored by the university or by various research grants. Research fellowships under grants are arranged on an 11-month basis. Teaching assistants are usually awarded summer fellowships, enabling them to pursue their research work more actively than is possible during the regular school year.

Assistantships and fellowships are allotted individually on the basis of the student's record. For an 11-month fellowship program the range of stipends is \$2,100-\$2,400 in addition to remission of tuition (\$1,050) and laboratory fees. The department also offers several postdoctoral fellowships.

Sponsors of fellowships and research programs include Clark University, Research Corporation, National Institutes of Health, Atomic Energy Commission, National Science Foundation, Esso Research Foundation and others.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

Recognizing the increasing importance of steroids in many fields of biological research, the National Cancer Institute of the National Institutes of Health, United States Public Health Service, has established grants for specialized training at the Department of Chemistry, Clark University, Worcester, Massachusetts, in collaboration with the Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts.

Applications are invited for appointment as postdoctoral fellows (Ph.D., M.D., or their equivalents) for twelve months with a stipend of \$5,500. Appointees who successfully complete the program will be awarded a certificate.

Academic credit (Chemistry 390) can be arranged and fellows may be selected to remain for further work in biochemistry.

Application forms and further information will be supplied upon request.

RESEARCH

A research problem is undertaken by each graduate student shortly after enrollment. The department offers research work in inorganic, organic, physical, physical-organic and nuclear chemistry, and biochemistry, in the following fields of investigation:

Synthesis of amino acids and other metal-ion complexing agents.

Catalytic effects of metal chelate compounds.

Thermodynamic properties of metal chelate compounds in solution.

Dissociation constants of weak electrolytes from electromotive force measurements.

Infrared and ultraviolet absorption spectra of metal chelate compounds.

Optical methods for the study of inhomogeneous liquids.

Diffusion of electrolytes, amino acids and peptides in water.

Ultracentrifuge studies of proteins, synthetic high polymers and smaller molecules.

Chromatographic analysis of proteins and their macromolecular degradation products.

Mechanism of low-energy nuclear reactions, including fission.

Chemical effects of nuclear transformations.

Radiochemical applications to analytical chemistry.

Organic reaction mechanisms and organic syntheses.

Chemistry of small ring compounds.

Substitution reactions, bridged bicyclic systems, selenium dioxide oxidations.

Biosynthesis of steroids and related natural products.

Occurrence of natural products in relation to species differences and phylogenetics.

Mechanism of biochemical reactions.

RESEARCH AND TEACHING FACILITIES

Modern facilities for teaching and research are provided in the 35,000 sq. ft. of Jeppson Laboratory of Chemistry, completed in 1959.

Research apparatus in the Chemistry Department include: high-pressure hydrogenation apparatus, double-beam infrared recording spectrophotometers, ultraviolet recording spectrophotometer, precision conductivity bridge, precision capacitance bridge for dielectric constants, recording polarograph, heavily shielded anti-coincidence low-level Geiger counters, scintillation spectrometer with multi-channel pulse-height analyzer, interferometric Gouy diffusion apparatus, continuous recording Rayleigh interferometer, optical ultracentrifuge, chromatography equipment, as well as all of the necessary standard research equipment.

Much of this equipment was especially designed and assembled in this laboratory. The department has a student machine shop to handle small work. Excellent machine shop facilities in Worcester have produced large parts for equipment of original design.

RESIDENCE, COURSE AND LANGUAGE REQUIREMENTS

Entering students take a written placement examination based on undergraduate organic and physical chemistry. This examination is normally given during the week prior to registration. Performance on this examination does not affect the student's standing, but is used only to help plan his program of studies. Every student will normally take courses 211b, 230a, 322a, and 340a during his residence. All graduate students participate in Chemistry 380 and participation in seminar, Chemistry 350, is required. Tuition is not charged for either of these non-credit courses. Additional required courses will be selected for both the master's and doctor's program in accordance with the student's field of specialization.

For special requirements for the degrees of Master of Arts and Doctor of Philosophy, see the general announcement of the Graduate School, above.

Courses in Chemistry

During the academic year 1959-60, the following courses were given: 11, 13, 14a, 19, 190b, 214, 215, 218a, 218b, 300, 312, 336, 337, 342, 345, 347, 350, 380, 390. For descriptions of these, see the 1959-60 BULLETIN.

The following courses will be offered in 1960-61: 11, 13, 14a, 19, 116a, 190b, 214, 215, 218a, 218b, 211b, 230a, 311a, 321b, 322a, 324b, 333b, 340a, 341b, 350, 364a, 365b, 380, 390.

11. General Chemistry.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three hours of laboratory per week. Prerequisite for all other courses in chemistry. Divisible only by consent of instructor.

13. Organic Chemistry.

Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three hours of laboratory per week. Prerequisite: a grade of C— or better in Chemistry 11.

MR. TRACHTENBERG

14a. ~~Analytical Chemistry~~. Quantitative Analysis (1959-60; 1960-61)

Principles of chemistry underlying volumetric and gravimetric analysis. Laboratory analysis of simple inorganic systems. One lecture and six hours of laboratory per week. Prerequisite: Chemistry 13 (may be taken concurrently).

MR. SUGIHARA

19. Physical Chemistry.

Principles of physical chemistry including gases, liquids, solutions, crystalline solids, chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Required for a major in chemistry. Three lectures and three hours of laboratory per week. Prerequisites: Chemistry 13, 14a (may be taken concurrently). Mathematics 13 is strongly recommended.

MR. KEGELES

116a. Organic Qualitative Analysis. [Not offered, 1959-60]

Prerequisite: Chemistry 13. One lecture and six hours of laboratory per week.

MR. MARTELL

Mr. Heinert

(Omitted from General Catalog)

230a Physical Organic Chemistry

Fundamental theory of organic chemistry, molecular structure, acidity and basicity, kinetics and mechanism with emphasis on the most recent advances in organic chemical theory. Prerequisite: Chemistry 13 and 19. (To be given by E. N. Trachtenberg)

(as given by E. M. Macdonald)
Chemical theory, mechanism, equilibrium, and the
role of the catalyst in the reaction of organic
structures, acidity and basicity, the effect of the
fundamental theory of organic chemistry, and the effect

2106 Physical Chemistry

(omitted from General Catalog)

190b. Advanced Physical Chemistry.

Elementary quantum-mechanical treatment of the structure of nuclei, atoms, and molecules. Statistical mechanics of simple systems. Three lectures and three hours of laboratory (instrumental analysis) per week. Prerequisite: First semester of Chemistry 19.

MR. SUGIHARA

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS**211b. Physical Properties and Molecular Structure.** (Not offered, 1959-60 or 1960-61)

A study of physical properties useful in the determination of molecular structure, including molecular refraction, electrical and magnetic polarization, nuclear and electron magnetic resonance, optical rotation absorption spectra, crystal field theory, x-ray and electron diffraction. Three lectures per week. Prerequisite: Chemistry 19.

MR. MARTELL

214. Special Projects.

Individual work of an investigative nature which may include a search of the chemical literature as well as laboratory work.

STAFF

215. Honors Course.

Primarily for candidates for "honors in chemistry." A laboratory research project.

STAFF

218a. Natural Products.

Separation, characterization, and proof of structure of biologically significant natural products. Methodology for the isolation and identification of these materials. Three lectures and three hours of laboratory per week.

MR. NES

218b. Biochemistry.

Enzymatic reactions, biosynthesis, metabolism and energetics of biochemical reactions. Hormonal and other control of physiologic processes, vitamins, transport. Three lectures and three hours of laboratory per week. Prerequisite: Chemistry 218a.

MR. NES

GRADUATE COURSES IN CHEMISTRY

Except for Chemistry 300, 350, and 380, which run through the year, the courses listed below are semester courses. Chemistry

300, 322a, 340a, 350, 380, and 390 are offered each year, all others in alternate years.

300. Research.

STAFF

311a. Coordination Chemistry.

Primarily for students carrying on research in the field of coordination compounds.

MR. MARTELL

312a. Inorganic Chemistry.

[Not offered 1960-61]

Correlation of physical and chemical properties with atomic structure and periodic classification. Descriptive chemistry of the elements, including the lanthanides and actinides. First semester.

MR. MARTELL

321b. Colloid Chemistry.

Osmotic and sedimentation equilibrium. Diffusion, sedimentation velocity, countercurrent distribution, chromatographic theory.

MR. KEGELES

322a. Thermodynamics.

Applications of classical thermodynamics to chemical systems.

MR. KEGELES

323. Statistical Mechanics.

[Not offered 1960-61]

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 322a and 340a or their equivalents. Second semester.

MR. KEGELES

324b. Refractometric Techniques.

Applications of refractometric and interferometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography.

MR. KEGELES

331b. Advanced Physical Organic Chemistry.

[Not offered 1960-61]

Modern interpretation of organic reaction mechanisms including molecular rearrangements, chain reactions and other reactions not covered in Chemistry 230a. Prerequisite: Chemistry 230a.

MR. TRACHTENBERG





333b. Synthetic Organic Chemistry.

Lectures on synthesis of organic molecules emphasizing scope and limitations of general methods, mechanisms, and stereochemistry. Synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230a.

MR. TRACHTENBERG

340a. Quantum Chemistry I.

Elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems.

MR. SUGIHARA

341b. Quantum Chemistry II.

Atomic and molecular systems, interaction between atoms. Prerequisite: Chemistry 340a.

MR. SUGIHARA

342b. Nuclear and Radiochemistry.

Fundamentals of nuclear science; production, isolation, identification and measurement of radioactive atoms. Prerequisite: Chemistry 340a or Chemistry 190b.

MR. SUGIHARA

350. Seminar.

Reports on research work and discussions of recently published work.

GUEST LECTURERS, STAFF AND GRADUATE STUDENTS

364a. Ultraviolet and Visible Spectroscopy.

General theory of light absorption, UV spectra of organic and inorganic compounds, and application of UV spectra to structural determination.

MR. NAKAMOTO

365b. Theoretical Chemistry of Complex Molecules.

Application of approximate methods to complex molecules and quantum mechanical interpretation of organic reactions.

MR. NAKAMOTO

366a. Infrared and Raman Spectroscopy. [Not offered 1960-61]

General theories of vibrational spectra, and application of infrared and Raman spectra to structural determination.

MR. NAKAMOTO

367b. Microwave and Radiofrequency Spectroscopy.

[Not offered 1960-61]

Theories of pure rotational spectra, paramagnetic resonance spectra, nuclear magnetic resonance spectra and nuclear

quadrupole resonance spectra, and their application to structural determination. MR. NAKAMOTO

380. Research Conference.

Informal reports of research work being done in the laboratory. STAFF AND GRADUATE STUDENTS

390a. Steroid Biochemistry.

A specialized course in the biochemistry of the steroids. For further description see statement above on Training Program for Steroid Biochemistry, Lectures and Laboratory. Double course credit. MR. NES, STAFF AND GUEST LECTURERS

Department of Classics

ASSOCIATE PROFESSOR BARLOW

The Department of Classics provides undergraduate courses for acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Advanced courses leading to a major in Classics are offered from time to time. Other courses, given entirely in English, deal with all phases of the Greek and Roman civilizations.

Since it is not possible to offer courses in elementary Greek and Latin every year, students who desire to elect them should consult the instructor as far in advance as possible.

Prize in Greek. The Ahepa Greek Prize of twenty-five dollars is awarded to the best student in *Elementary Greek*. Income for the prize is provided by the Worcester chapter, Order of Ahepa.

Courses in Classics

During the academic year 1959-60 the following courses were given: Greek 11, 123a; Latin 12, 13, 19, 123b.

GREEK

11. Elementary Greek.

[Not offered, 1960-61]

Greek grammar through forms, syntax, vocabulary, and reading; selections from Xenophon's *Anabasis*. Open to freshmen. Indivisible course.

MR. BARLOW

12. Attic Greek Prose; Homer's Iliad.

[Not offered 1959-60 or 1960-61]

Prerequisite: Greek 11.

13. Greek Drama.

[Not offered 1959-60 or 1960-61]

Prerequisite: Greek 12 or equivalent.

123a. Greek Civilization.

Lectures, readings, and discussion on the history, literature, philosophy, art, religion, and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English. Open to freshmen.

Greek 123a may be counted with Latin 123b in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language. MR. BARLOW

LATIN

11. Elementary Latin. [Not offered 1960-61] ^{1959-60 or}
Introduction to the Latin language through forms, syntax, and vocabulary, with emphasis on the Latin element in English words. Selections from Latin prose. Open to freshmen. Indivisible course.
12. Cicero's Orations; Vergil's Aeneid [Not offered, 1960-61]
Prerequisite: Latin 11 or two years of Latin. MR. BARLOW
13. Catullus and Horace; Plautus and Terence.
The course may begin with prose selections to rectify the lack of uniformity in preparation in secondary schools. Prerequisite: Latin 12 or at least three years of Latin.
MR. BARLOW
15. Roman Historians; Poets of the Augustan Age. ^{1959-60 or}
[Not offered 1960-61]
17. Roman Philosophers; Roman Satire. [Not offered 1959-60]
Prerequisite: Latin 13.
19. Survey of Latin Literature. ^{1959-60 or}
[Not offered 1960-61]

123b. Roman Civilization.

Lectures, readings, and discussion on the history, literature, philosophy, art, religion, law, and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Given in English. Open to freshmen. Latin 123b may be counted with Greek 123a in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language. MR. BARLOW

Department of Economics and Sociology

PROFESSOR MAXWELL, PROFESSOR MELDER, ASSOCIATE PROFESSOR KILLIAN, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE PROFESSOR NICHOLSON, ASSOCIATE PROFESSOR VAN TASSEL, ASSISTANT PROFESSOR BALKO, ASSISTANT PROFESSOR SARACHEK, LECTURER BREEN, LECTURER LORING, LECTURER LEVINE, INSTRUCTOR MONIZ

James Wightman, Teaching Assistant in Economics
UNDERGRADUATE WORK

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 100, 102, 120a, 121b, 140, 150a, 160, 170b, 182a, 184).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program. In the second year, they should elect Economics 11 and Business Administration 100. In the third and fourth years, they should select courses in economics and in business administration in consultation with their advisers.

Economics 11 is a prerequisite to all other courses in economics. Similarly, Sociology 11 is a prerequisite to other courses in sociology. Courses taken outside the department in partial fulfillment

of the major requirement should be selected, subject to departmental approval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 205a, Intermediate Economic Theory.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternate years.

GRADUATE WORK

The program for the degree of Master of Arts is worked out individually with each student.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of economics should regard certain courses in business administration as part of the offerings of the Department of Economics and Sociology.

Courses in Economics

During the academic year 1959-60, the following courses were given: 11, 13a, 23b, 15a, 21b, 22, 25b, 26, 28, 29a, 200a, 200b, 205a, 207a, 207b, 280b, 39a, 311, 32, 325, 34, 326, 327, 334, 339, 370b.

Descriptions of courses listed below under the designation "Business Administration" will be found in the announcement of "Courses in Business Administration."

PRIMARILY FOR UNDERGRADUATES

11. Principles of Economics.

Indivisible force. Open to Freshmen.

Mr. VAN TASSEL
Assisted by Mr. ALEXANDRIN
and Mr. WHEATON

Business Administration 100. Accounting.

Business Administration 102. Intermediate Accounting.

Business Administration 150a. Marketing.

Business Administration 182a. Personnel Management.

13a. Money and Banking.

Mr. MAXWELL

23b. Problems in Money and Banking. [Not offered, 1960-61]

Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent.

Mr. MAXWELL

140b. Consumer Economics.

[Not offered 1959-60 or 1960-61]

Consumers' roles in a market economy and their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private non-commercial agencies, the government, and the cooperative movement.

Mr. MELDER

15a. Public Finance.

The principles of governmental expenditures, revenues, and debts, with particular reference to the United States.

Mr. MAXWELL

Business Administration 120a. Corporation Finance.

Business Administration 121b. Introduction to Investments.

Business Administration 140. Business Law.

Business Administration 160. Business Statistics.

Business Administration 184. Labor Relations.

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

200a. Economic Growth.

Analysis of economic growth theory, cultural, social and political factors making for growth. Factors within underdeveloped countries which hinder economic development will be examined.

MR. MELDER

200b. Problems in Economic Growth.

The course examines some economic and social theories pertinent to economic growth. It then considers policy problems in two areas: acceleration of development rates in poorer countries and maintenance of growth in richer countries. Class members make studies of topics related to growth problems.

MR. MELDER

205a. Intermediate Economic Theory.

An analysis of contemporary price theory.

MR. VAN TASSEL

207a. International Trade Theory.

Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium.

MR. VAN TASSEL

207b. International Economic Policy.

A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a.

MR. VAN TASSEL

21a. Business Cycles.

1959-60 or
[Not offered 1960-61]

Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

21b. National Income Analysis.

A study of contemporary income theory. **MR. VAN TASSEL**

1959-60^{or}

210a. Economic and Social Reform. [Not offered 1960-61]

The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy.

211b. Comparative Economic Systems. [Not offered 1960-61]

1959-60

An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations.

Business 290. Analysis of Business Problems.

22a. Labor Economics.

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems. **MR. MELDER**

22b. Labor Economics.

Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance. **MR. MELDER**

231. Economic History of the United States. [Not offered 1960-61]

1959-60^{or}

24a. History of Economic Doctrine.

After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists. **MR. MAXWELL**

25b. Problems in Public Finance. [Not offered in 1960-61]

The theory underlying the so-called "full employment" act of 1946 is discussed, along with methods by which it may be implemented. Other questions examined are: reform of the federal, corporate income tax and death duties, incentive taxation, federal debt policy, the capital budget, federal budgetary procedure. **MR. MAXWELL**

[Offered 2nd sem only
in 1960-61]**26. Industrial Organization and Governmental Control.**

Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. Conducted on a seminar basis with student papers and reports often forming the basis for discussion. MR. NICHOLSON

27b. Introduction to Mathematical Economics. [Not offered, 1959-60 or 1960-61]

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Some attention will be given to special topics such as game theory and linear programming. Prerequisite: Mathematics 12—Calculus. Admission subject to approval of the instructor.

MR. NICHOLSON

28. Research in Selected Economic Problems.

STAFF

280b. Honors Seminar.

Designed to assist honors candidates in integration of the field. Prerequisite for honors.

STAFF

29a. Statistical Method. [Given in 2nd sem., 1960-61]

The nature of statistics; statistical description; statistical inference; special topics. Special emphasis will be given to theoretical and observed frequency distributions, elements of probability theory, problems of sample design and interpretation, decision theory, time series, index numbers, and measures of association and correlation.

MR. NICHOLSON

Ordinarily required of all majors in Economics. With the approval of the Director of the Division of Business Administration, this *half course* may be substituted for B.A. 160, Business Statistics, by candidates for the degree of Bachelor of Science in Business Administration.

Business Administration 252. Marketing Research.

Business Administration 255b. Marketing Policies.

Business Administration 290. Analysis of Business Problems.

PRIMARYLY FOR GRADUATE STUDENTS

39a. Economic Theory.

Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes.

MR. MAXWELL

311. Seminar

STAFF

370b. Problems in Quantitative Economics.

Study of the application of mathematical and statistical techniques to economic problems.

MR. NICHOLSON

313. Reading	}	In Money and Banking	MR. MAXWELL
31. Thesis			

322. Reading	}	In Labor	MR. MELDER
32. Thesis			

324. Reading	}	In Marketing	MR. BALKO
33. Thesis			

325. Reading	}	In Public Finance and Fiscal Policy	MR. MAXWELL
34. Thesis			

326. Reading	}	In Business Organization and Government Control of Industry	MR. NICHOLSON
35. Thesis			

327. Reading	}	In International Economics	MR. VAN TASSEL
36. Thesis			

334. Reading	}	In History of Economic Thought	MR. MAXWELL
34. Thesis			

339. Reading	}	In Economic Theory	MR. MAXWELL
37. Thesis			

Sociology

UNDERGRADUATE WORK

An undergraduate whose primary interest is in sociology may meet the department requirement for a major by completing Economics 11 and three or four courses in sociology together with two or three approved courses in related departments. Related courses require departmental approval and must be discussed with advisers each registration day.

GRADUATE WORK

A range of courses sufficient for the needs of candidates for the master's degree only is offered. Individual work with instructors and small intimate seminars constitute a goodly part of the graduate student's program.

PREPARATION FOR LAW SCHOOL

A rigid program of pre-law core courses is discouraged by most law schools, by the American Bar Association, and by the Association of American Law Schools. Undergraduates heading for law schools are advised to seek a broad college education. The major field for the student undergraduate is not limited to a particular subject or a fixed group of studies. Some attention to the social sciences is generally favored, but is not mandatory.

Over the years many Clark students have been admitted to the best law schools in the country, often with very good scholarships. Within the last five years, for instance, two Clark men have captured a Root-Tilden scholarship, paying each man over \$7,000 toward expenses while attending New York University Law School.

There is an active student law club at Clark University. Distinguished lawyers, law professors and judges address the members and often talk to appropriate classes. Mr. Frederick W. Killian of the Department of Economics and Sociology, and also a lawyer, serves as adviser to those students planning to attend law schools. He is in close touch with legal education, and is readily available for consultation about law schools, scholarships, and undergraduate programs.

Courses in Sociology

During the academic year 1959-60, the following courses were given: 11a, 11b, 15a, 23b, 29a, 29b, 270a, 270b.

PRIMARILY FOR UNDERGRADUATES

11a. Introductory Sociology: Principles of Sociology.

The development of man; culture; culture and personality; social organization and structure; groups and group life; social relations; social norms; collective behavior; human ecology and population; socialization and social interaction; social disorganization and change; social institutions. Prerequisite for further work in sociology. Open to freshmen.

MR. KILLIAN

Assisted by MR. WIGHTMAN - 1960-61

11b. Introductory Sociology: Sociological Analysis.

The application of sociological principles to the analysis of social situations, social problems and society. Prerequisite for further work in sociology.

MR. KILLIAN

Assisted by MR. WIGHTMAN - 1960-61

12a. Introduction to Cultural Anthropology. [Not offered 1960-61]

The evolution and development of man and his culture; basic concepts; the races of man and their distribution; processes of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission, and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

15a. Social Institutions.

[Not offered, 1960-61]

Institutional theory. History and development of major social institutions. Social control and social institutions. The basis of institutions in primitive experiences; belief systems of primitive peoples; family and kinship systems; institutional differentiation. Major institutions in the historical context of western civilization and modern experience. Person, self and institutions.

MR. KILLIAN

16a. Social Problems, Order and Control. [Not offered, 1959-60]

Contemporary social problems in the United States; the sociological means for their analysis.

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

21a. The Family and Society.

[Not offered 1960-61]

1959-60 or

The institutions of the family and of marriage as major systems of social control in Western society. Kinship among pre-literate peoples. The patriarchal family of the Hebrews; the Roman trustee family and its decline; the domestic family of Europe; the impact of modern conditions on the family. The family and institutional theory.

MR. KILLIAN

23b. Crime, Delinquency and Society.

[Not offered 1960-61]

Criminal law and the impact of the study of criminology. Attempts to find "causes of crime." Patterns of criminal behavior. Social control of crime and delinquency. Modern methods of treatment and contemporary corrections.

MR. KILLIAN

25b. Social Institutions: Legal Institutions.

[Not offered 1960-61]

1959-60

Law and the social order: development of Western legal institutions; the normative content and analysis of legal institutions and law; relation to religious institutions; the legal tradition in Western society; law as a means of social control. *Law, policy and Society;* law and its functions in modern times; the changing basis of legality; premises concerning man and his world in relation to law and its function. Sociology, anthropology and law. Selected readings in theory and analysis of case materials.

MR. KILLIAN

270a. Industrial Sociology.

[Not offered, 1960-61]

A study of industrial society with special emphasis on the relationships among persons as members of the many groups included in this society. The impact of social institutions on the character of the relationships studied. The formal and informal groups within the industrial form will be given attention as will the firm and community, viewed as interacting organizations. Not regularly offered.

DR. LORING

270b. ~~Use of Sociology in Business.~~ *Human Relations in Bus. + Industry*Business Administration 270b. Not Regularly offered.

Offered in 1959-60 MR. LEVINE

29a. Social Theory and Introduction to Sociological Concepts.

The development of man's ideas about social life from Plato to Spencer. The general developments of sociology since Spencer. Required of Sociology majors. MR. KILLIAN

29b. Advanced Sociological Theory.

The writings of Sumner, Durkheim, Max Weber, Cooley, Mead, Becker, MacIver, and Parsons, as seen in the trend of sociological theory. The course is centered in the writing of a detailed term paper. MR. KILLIAN

28. Research in Selected Sociological Fields.

This course includes departmental honors and other individual projects by special permission of the department. Honors category; Reading category.

Department of Education

PROFESSOR JONES, ASSOCIATE PROFESSOR BORGER, ASSOCIATE PROFESSOR COFFEE, ASSISTANT PROFESSOR GRIBBONS, LECTURERS SHEPHERD, WRAY, AND HARRIMAN

With the cooperation of PROFESSOR WARMAN of the Graduate School of Geography, ASSOCIATE PROFESSOR BECK of the Department of Philosophy, and Miss HUGHES, Dean of Women.

The Department has as its primary objective the providing of cultural and professional study for teachers and prospective teachers in elementary and secondary schools and academies. It offers introductory courses in education for all students of junior standing or above who may be interested in teaching, and integrated programs of training at both the elementary and high school levels.

UNDERGRADUATE WORK

The department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their careers at the university as convenient. The actual electing of courses in education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to teach.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the department offers its courses as electives, and not as an undergraduate major. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with three purposes in mind: (1) to provide introductory instruction to students who plan to teach in secondary schools and academies, and who, in preparation for such teaching, plan a fifth year of study leading to the degree of Master of Arts in Education;

(2) to provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools; (3) to offer certain introductory courses in education to students who have not definitely decided upon teaching as a career but who desire some acquaintance with the problems of the field.

For students desiring to enter elementary school teaching immediately upon receiving their undergraduate degree, a program has been evolved, in cooperation with the faculty, whereby the election of up to 18 semester hours in education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in education in these last two years.

GRADUATE WORK

For students wishing to prepare for teaching in secondary schools and academies the department recommends high concentration in the undergraduate program upon the subject-matter fields in which they wish to teach, and suggests that they reserve for a fifth year most of the professional work in the theory and practice of teaching. A fifth-year program leading to the degree of Master of Arts in Education is offered by the department with majors available in elementary and secondary teaching aid. The program includes additional work in the student's subject-matter field, professional courses in education, and supervised internship teaching in secondary schools. The master's degree is more and more being required of new appointees in high schools and is usually rewarded by a higher level of remuneration. To assist high ranking students who find the one year of full time graduate work difficult to finance, the department has a limited number of scholarships available to assist with tuition costs.

Requirements. The requirements for the degree of Master of Arts in Education cannot be adequately stated in terms of courses to be taken, because the evaluation of the work of each student will be made on the basis of achievement rather than on the basis of

courses completed. However, the minimum essentials in terms of course requirements are outlined below.

Course requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

- (a) Mathematics and natural sciences
- (b) History, geography, and economics
- (c) Ancient and modern foreign languages
- (d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the department. Changes in the proportion of education and subject-matter courses may be made by the department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The department provides opportunities for internship teaching under supervision for all graduate students majoring in education. For graduate students of the department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

- (a) Prepare an acceptable thesis or special report.
- (b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least four-semester

courses in subject-matter area). This plan will apply primarily to experienced teachers and particularly to those doing much of their study in the summer sessions.

(c) Elect, in lieu of thesis, a two-semester or double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Courses in Education

During the academic year 1959-60 the following courses were given: 100a, 201a, 207b, 208a, 210a, 215a, 260b, 263a, 290b, 301b, 303b, 309a, 311a, 311b, 312, 313b, 314a, 314b, 315a, 322b, 350, 380b.

PRIMARILY FOR UNDERGRADUATES

100a. Introduction to Education.

This course is designed to introduce the student to the historical, social, political, and economic forces that have educational trends and issues will be studied. Open only to juniors and seniors.

MR. GRIBBONS

FOR GRADUATE STUDENTS AND ADVANCED UNDERGRADUATES

201a. Educational Psychology: Child Growth and Development.

Principles basic to the understanding of children with special attention to emotional and social development and learning in the elementary school years.

MR. GRIBBONS

207b. Use of Audio-Visual Materials in Teaching.

Principles and practices in the use of visual and auditory materials and community resources in teaching. Extra work required for undergraduates. Laboratory work required and a fee of \$8.00 charged for material.

MR. BORGER

210a. Educational Psychology, Advanced: Psychological Approach to Citizenship Development.

A study and evaluation of the theoretical formulations and

experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Extra work required of undergraduates.

MR. JONES

Given as 314a in 1959-60

214a. Tests and Evaluation: Measurement of Ability and Achievement.

The methods and problems involved in the evaluation of abilities and accomplishments of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement.

MR. JONES

215a. Internship Teaching in the Elementary School.

An extended period of observation and practice in teaching under supervision in regularly organized classes in elementary school. Each student is assigned to a supervising teacher, under whom he or she works for a minimum of ten hours per week for the first semester. The first week of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and playground supervision are part of the requirements of each student.

MR. JONES, MR. GRIBBONS,

MRS. HARRIMAN, AND SUPERVISING TEACHERS

20b. (Geography 20b.) Geography in Education.

Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Extra work required of undergraduates.

MR. WARMAN

27b. Principles of School and Recreational Leadership. *[Not offered 1959-60, or 1960-61]*

The basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of instructor required for registration. Extra work required of undergraduates.

MISS HUGHES

263a. Methods and Materials in Teaching of Language Arts in the Elementary School.

Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Extra work required of undergraduates.

MR. SHEPHERD

260b. Curriculum Development in Elementary Education.

A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of co-operating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Extra work required of undergraduates.

MISS WRAY - 1959-60

290b. Philosophy of Education.

Mr. Shepherd - 1960-61

[Not offered in 1960-61]

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. Extra work required of undergraduates.

MR. BECK

FOR GRADUATE STUDENTS**301b. Educational Psychology: Adolescent Growth and Development.**

Psychological principles as they bear upon learning and other problems of education with special reference to the growth and development of youth of secondary school age.

MR. JONES

303b. Curriculum Development in Secondary Education.

The historical background, basic issues, principles, and procedures of curriculum organization and development in secondary schools.

MR. GRIBBONS

208a in 1959-60

308a. Methods and Materials in Secondary Education.

Methods and techniques used by the teacher in high school teaching, and a survey of materials available.

MR. BORGER

309b. Social Learning in Relation to Teaching and Counseling.

The purpose of this course is to consider concepts of learning which contribute to an understanding of the development of social behavior. Principles of learning and teaching from the fields of social psychology and sociology will be studied within the context of the social environment.

MR. COFFEE

Given as 309a in 1959-60

310a. Guidance: Counseling.

Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case materials will be presented and analyzed. (311a must be taken simultaneously or have been taken previously.)

MR. COFFEE

310b. Citizenship Development: Seminar in Methods and Materials.

A study of procedures and programs in character and citizenship education in the schools. Attention will be given not only to curricular and co-curricular activities in the schools but also to the inter-relations between the school and other institutions and agencies in the community as they relate to the development of values and conduct in youth. MR. JONES

311a. Principles, Practices, and Organization of Guidance.

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course.

MR. COFFEE

312b. Guidance: Occupational Information and Placement.

The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service.

MR. COFFEE

313b. Personality Assessment in Guidance.

Lectures and demonstrations of techniques used to assess personality. Students will study critically a variety of evaluating methods and analyze the results.

MR. GRIBBONS

314b. Tests and Evaluation: Advanced Problems.

The measurement and evaluation of aptitudes, interests, attitudes, and personality with special attention to the problems of reliability of measurement and the possibilities of the use of such measures in teaching and counseling. MR. JONES

315a. Internship Teaching in the Secondary School.

An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.

MR. JONES, MR. GRIBBONS AND SUPERVISING TEACHERS

322b. Practicum in Guidance.

Supervised field work, reading, reports, and discussions. Pre-requisite 310a.

MR. GRIBBONS

350. Research in Education.

Individual direction of students in their research projects.

STAFF

380b. Departmental Seminars on Current Problems.

STAFF AND GRADUATE STUDENTS

Department of English

ASSOCIATE PROFESSOR ANDERSON, ASSOCIATE PROFESSOR BEARD,
ASSOCIATE PROFESSOR CARTER, ASSISTANT PROFESSOR SULTAN,
INSTRUCTOR CUNNINGHAM, INSTRUCTOR SCHROEDER, VISITING

INSTRUCTOR HABER

1959-60 - Carl O. Borrner, Jr., Instructor in Pub. Speaking

Freshmen must take both semesters of English 11.

General Education 17 (Major British Writers) is designed especially for non-English majors, and either half is recommended for students who wish to take a course in literature as a means of fulfilling the requirement of a third semester of English beyond English 11. English 13a, 111, 142, 143a, 144b and other courses (with the consent of the instructor) are also open to non-English majors; especially recommended is English 13a (Introduction to Poetry). English 12 cannot be used to fulfill the requirement of a third semester of English.

A major in English consists of a minimum of seven courses in addition to English 11, as follows:

1. English 13a. Normally this course should be taken in the sophomore year. *For English majors*, English 13a is prerequisite to any of the following courses: 101b, 104, 105, 107a, 110, 113, 117b, 122a, and 146b.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 107a, 110, 113, 117b, 122b, and 146b.
3. Three additional half-courses in English.
4. Three courses in allied fields: General Education 14; a year course in philosophy (preferably Philosophy 12); and one other course approved by the Department of English, preferably from the following list: Fine Arts 11, General Education 143, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, and Music 12.

English majors should follow as closely as possible the following program:

First year

English 11

Group A

Group B (General Education 14)

Foreign language

One elective (A course which meets the general Bachelor of Arts requirement in Fine Arts is recommended.)

Second year

English 13a and three other half-courses in English from groups of courses open to sophomores, namely: 16a, 19b, 111, 126a, 142, 143a, 144b, and General Education 18

Group A

Foreign language

One elective. Courses recommended are Fine Arts 11, Music 12, General Education 143, History 12, French 113, German 141, Latin 123b and Greek 123a

Third year

Two half-courses in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Foreign language

Group B (a year course in philosophy)

One elective

Fourth year

English 150

Two other half-courses in English (recommended)

Three electives

PRIZES IN ENGLISH

The Hoyt Poetry Prize of fifteen dollars is awarded annually by the Department of English for the best poem by an undergraduate. This is the interest on a fund established by the alumni as a memorial to Prentiss Cheney Hoyt, Professor of English at Clark University from 1909 to 1920.

The Loring Dodd Drama Contest, inaugurated in 1955, offers a prize of \$30 to the student writing the best one-act play. Loring Dodd was Professor of English from 1910 to 1949 and also Chairman of the English Department.

Courses in English

During the academic year 1959-60 the following courses were given: General Education 17 and 18 and English 11, 12a, 13b, 16b, 19b, 104b, 110, 113, 121a, 122a, 143a, 144b, and 150b.

11. Composition and Literature.

English 11 aims (1) to improve the student's composition through a review of the principles of good writing, frequent themes, and individual conferences and (2) to teach him, through the techniques of close reading, to understand and evaluate literature. Open to freshmen. STAFF

12a. Public Speaking.

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conferences, and voice recordings to enable the student to recognize and correct his speech deficiencies. Open to freshmen. Permission of the instructor required. MR. SCHROEDER

13a. Introduction to Poetry.

[Mr. Barrner, 1959-60]

Utilizing class discussions and extensive writing assignments, this course makes an inductive and concrete study of a wide variety of poems and poetical problems—and of such important elements of poetry as diction and connotation, imagery and figurative language, tone and rhythm, and, especially, of the interrelations of these elements and their contributions to total meaning or theme. Attention is given to as many as possible of the chief kinds, functions, and values of poetry. Required of departmental majors. MR. CARTER

16a. Creative Writing.

A course designed to cultivate and guide student work in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Requirement: a one-semester course in literature, which may be taken concurrently. MR. SULTAN

19b. Intermediate Composition.

Further training in the basic principles of composition. Attention is given to word choice, sentence and paragraph structure, and organization. Exposition is emphasized. Individual conferences.

MRS. CUNNINGHAM

101b. Chaucer.

After a careful study of the Prologue to the *Canterbury Tales* to acquaint the student with the essentials of Middle English vocabulary, grammar, and scansion, most of the *Canterbury Tales* and all of *Troilus and Cressida* are read more rapidly. The emphasis throughout is on Chaucer's literary skill and breadth of vision. Offered in alternate years.

MR. ANDERSON

104. Milton and the Seventeenth Century. [Not offered 1960-61]

The first semester is devoted to a study of seventeenth century English literature exclusive of Milton and the Restoration Drama; that is, metaphysical poets (Donne, Herbert, Vaughan); the seventeenth century lyric (Jonson, Herrick, Crashaw, Marvell); prose works by Bacon, Burton, Browne, Walton, Bunyan, Pepys, and Evelyn; and in general, the rise of neo-classicism (Jonson, Hobbes, Dryden). The second semester considers in some detail the works of Milton and the Restoration Drama (Dryden, Etherege, Wycherley, Congreve, Farquhar). Offered in alternate years.

MR. CARTER

105. Eighteenth Century.

During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels*, plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant*, and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns, and Blake are studied. Offered in alternate years.

MR. CARTER

107a. English Literature from Beowulf to 1600

(exclusive of Elizabethan Drama).

[Not offered 1960-61]

After a study of the beginnings of English literature in such works as *Beowulf*, the folk ballads, *Everyman*, *Gawain and the Green Knight*, and two or three tales of Chaucer, the

course considers in more detail the non-dramatic writing of the Elizabethan Period, focusing on Spenser's *Faerie Queene*.

MR. ANDERSON

110. **Victorian Literature.**

[Not offered 1960-61]

In the first semester, selections from the more important British prose writers of the Victorian period are examined both for their contemporaneous significance and for their insights into problems which concern the modern mind. Authors studied include Mill, Carlyle, Ruskin, Arnold, Newman, Morris, Pater, and Stevenson. In the second semester, British Victorian poets are studied in the perspective of their immediate aesthetic and intellectual backgrounds and in terms of more recent critical attitudes and standards. Tennyson, Browning, Rossetti, Swinburne, Hopkins, Hardy, Housman, and Yeats are among the authors read. Offered in alternate years.

MR. BEARD

111. **American Literature.**

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, Melville, and Whitman; during the second semester, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner, and Hemingway. Offered in alternate years.

MR. BEARD

113. **Shakespeare and the Elizabethan Drama.** [Not offered 1960-61]

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist, his changing attitude toward life, and his relation to other important Elizabethan dramatists. The second semester is devoted mainly to a careful analysis of *Hamlet*, *Othello*, *Lear*, *Macbeth*, and *Antony and Cleopatra*. Offered in alternate years.

MR. ANDERSON

117a. **Literature of the Romantic Period.**

The course examines the currents of thought and feeling known as Romanticism through readings in prose and poetry of such writers as Blake, Wordsworth, Scott, Coleridge, Byron,

Shelley, and Keats. Emphasis is given to the implications, aesthetic and otherwise, of Romantic ideas and attitudes. Offered in alternate years. MR. BEARD

122b. Modern Poetry. [Not offered 1960-61]

A course in English poetry during the forty-year period from the First World War to the death of Dylan Thomas and Wallace Stevens, with brief consideration of the precursors of the period. W. B. Yeats, Ezra Pound, T. S. Eliot, W. H. Auden, Robert Frost, Wallace Stevens, and Dylan Thomas are the principal poets studied. Offered in alternate years.

MR. SULTAN

126b. Modern British and American Drama.

This course includes plays by Oscar Wilde, G. B. Shaw, J. M. Synge, W. B. Yeats, Eugene O'Neill, Thornton Wilder, T. S. Eliot, Arthur Miller, and others, and considers the relationship between modern English drama and such influential European playwrights of the turn of the century as Ibsen, Chekhov, and Strindberg. Offered in alternate years.

MR. SULTAN

127b. Modern Continental Drama. [Not offered 1960-61]

A survey of European drama from Ibsen to the present. The writers studied include Ibsen, Strindberg, Chekhov, Hauptmann, Maeterlinck, Pirandello, and Copek. Offered in alternate years.

142. The English Novel to Hardy.

A study of the development of the English novel from the beginning to the end of the nineteenth century. Among the novelists read are Defoe, Fielding, Richardson, Jane Austen, Scott, Dickens, Thackeray, George Eliot, and Hardy. Offered in alternate years.

MRS. CUNNINGHAM

143a. Modern British Fiction. [Not offered 1960-61]

The course deals primarily with the work of the four major British writers of fiction during the twentieth century: Joseph Conrad, D. H. Lawrence, Virginia Woolf, and James Joyce. Offered in alternate years.

MR. SULTAN

144b. Contemporary American Fiction. [Not offered 1960-61]

A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological in-

sights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Wolfe, Faulkner, and Mailer. Offered in alternate years. MR. BEARD

146b. Introduction to Literary Criticism.

This course involves the discussion of a selection of critics, from Aristotle to the present, who have been particularly influential in English and American literature. Offered in alternate years. MR. CARTER

150. Senior Survey.

This seminar seeks to help the senior major integrate his other English courses and to fill in any significant gaps in his English program. The reports and discussions trace, from early writing to the present, such concepts as Classicism, Romanticism, Realism and Naturalism, Tragedy, Comedy, Satire, and Humanism. Required of departmental majors. MR. ANDERSON

General Education 17. Major British Writers.

See "General Education" immediately preceding the alphabetical list of "Departments and Courses."

Department of Fine Arts

(Art and Music)

ASSISTANT PROFESSOR COWARDIN, ASSISTANT PROFESSOR RAFFMAN,
AND ASSOCIATE PROFESSOR (AFFILIATE) GRAZIANI

With the cooperation of Associate Professor Nicol, Associate Professor Barlow, and Associate Professor Edwards.

The department offers two programs for a major in fine arts. One is intended for those interested primarily in the history of art. The other is designed to provide sound training in fundamentals for qualified students whose principal interest is the practice of art.

History of art. Specific requirements for the major in history of art may be had upon application to the department.

All courses in the history of art make use of the collections of The Worcester Art Museum. In addition at least one trip per semester is required to museums in the Boston area.

Practice of art. The major in the practice of art is offered jointly by the university and the School of the Worcester Art Museum. It aims to provide, within the framework of a liberal arts program, a solid preparation for specialized study or practice in any of several branches in the field of art. Students selecting this program takes thirteen courses at the university (which must satisfy the general requirements for the bachelor's degree and must include Fine Arts 11 and General Education 14), and seven courses at the Museum School. These are distributed over the four-year college period as follows:

	Clark	Museum School
Freshman year	4	1
Sophomore year	4	1
Junior year	3	2
Senior year	2	3

Candidates for admission to Clark University who wish to elect the major in practice of art should each submit, along with the application form, a portfolio of about a dozen representative pieces of work in drawing, painting, design, etc., which should be clearly marked with the candidate's name and address.

Courses in Fine Arts

During the academic year 1959-60 the following courses in Fine Arts were given: 11, 12b, 15, 191a, 199.

11. An Introduction to Western Art.

Lectures during the first four weeks deal with general topics such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture, light and painting in the light of their times. Open to freshmen. New students not admitted in the second semester.

MR. COWARDIN

111. Basic Drawing and Painting.

Introduction to the drawing or depiction of objects in the field of vision; theory and practice in the statement of line, form, light and shade, and perspective. Study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in museum collections. Open to freshmen majors and to a limited number of non-majors with the permission of the instructors. Nine hours of studio work per week at the Worcester Art Museum. Indivisible.

MR. GRAZIANI AND MISS MURPHY

12b. A Survey of Western Painting.

General problems of pictorial expression are treated as well as the historical aspects of style. Open to freshmen. May not be counted in addition to Fine Arts 11.

MR. COWARDIN

15. Art of the Renaissance in Italy.

MR. COWARDIN

16. Art of the Seventeenth and Eighteenth Centuries.

1959-60 or

[Not offered 1960-61]

191a. The Art of the Ancient Near East and India. [Not offered 1960-61]

MR. COWARDIN

192a. The Art of China and Japan. [Not offered, 1959-60 or 1960-61]

MR. COWARDIN

199. Advanced Painting and Design.

General designation for all courses at the School of the Worcester Art Museum above the elementary level. Ordinarily open only to majors in the practice of art.

STAFF OF THE MUSEUM SCHOOL





Courses in Music

During the academic year 1959-60 the following courses in Music were given: 12a, 12b, 13a, 15b.

12a. Introduction to Music.

The essential elements of musical construction. Prerequisite for all other courses in music except 15b. MR. RAFFMAN

12b. The Baroque and Classical Periods. [Not offered 1960-61]

A stylistic survey of the 17th and 18th centuries.

MR. RAFFMAN

13a. Twentieth Century Music.

MR. RAFFMAN

13b. Romantic Music.

[Not offered, 1959-60]

The 19th century.

MR. RAFFMAN

14b. Problems in Theory.

[Not offered, 1959-60]

The application of theoretical principles to analysis and composition. Prerequisite: permission of instructor.

MR. RAFFMAN

15b. Keyboard Music.

[Not offered 1960-61]

Musical construction and style as seen through the medium of the keyboard. May be substituted for but not credited in addition to 12a.

MR. RAFFMAN

Freshman Orientation Course

Orientation. A required non-credit course for freshmen. Two periods per week are required for the first half of the first semester and one period per week is required for the remainder of this semester. Additional class periods are planned during the second semester to discuss the selection of a major field of study.

Topics include the history and nature of the university; liberal and vocational education; the curriculum; the individual in relation to the institution, the staff, and fellow students; the library; reading, note taking; methods of study; examinations; and the physiology of sex.

General Orientation

DEAN HUGHES AND DEAN BORGER

Physiology of Sex

DR. SCARCELLO AND DR. KRESSLER

Geography

PROFESSOR VAN VALKENBURG, PROFESSOR MURPHY, PROFESSOR
LOUGEE,* PROFESSOR WARMAN, INSTRUCTOR BURNHAM,
VISITING PROFESSOR RAISZ, VISITING PROFESSOR BIRCH,

VISITING PROFESSOR SHAW

Hans H. Carol, Ph.D., Visiting Prof. of Geog., 1958-60

A complete statement of the organization and special requirements in the Graduate School of Geography will be found in an earlier section of the catalog under the heading "The Graduate School of Geography."

UNDERGRADUATE PROGRAMS

Undergraduates planning to major in geography or to enter graduate work in geography are urged to consult the geography staff early in their undergraduate course in order to plan suitable programs which will include the essential courses in related fields.

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five, of these courses must be in geography.

Geography 10, Principles of Geography, is usually taken in the freshman year; or, as early as possible after the selection of Geography as a major. One or two of the following courses may be taken during the sophomore year: Geography 12a, Geography 16, Geography 191.

Such courses as 25b, 28a, and regional courses should not be undertaken until the junior or senior years. Juniors of superior standing and seniors may take, by special permission, number "2" geography courses, such as 201, 20b, 282b, 283b, 285a, 285b.

COURSES IN FIELDS RELATED TO GEOGRAPHY

Geography majors should plan their work in related fields so that the basic courses prerequisite to the advanced courses of the junior and senior years are taken in the freshman and sophomore years.

Subjects in Group A (Science and Mathematics) strongly recommended by the staff are geology and biology. However, where

* Died May 16, 1960.

special interest is expressed in physics, chemistry, psychology, or mathematics, the student's program can be planned to include these subjects.

Related fields are found listed under Group B (Social Science). General Education 14 is recommended for the freshman year. Courses recommended for the sophomore year are: Economics 11, Government 15, History 12, Sociology 11. More advanced work in the fields of sociology, international relations, psychology, and philosophy will depend largely upon the individual student's interests.

HONORS

A junior or senior pursuing an "honors program" in geography is afforded an opportunity to associate with other students in the Graduate School of Geography. For example, a superior student, after petitioning and receiving approval of the College Board and the Secretary of the Graduate Board, may undertake Advanced Cartography; Physiography of the Western Hemisphere; Soils; Land Use; Climatology; Problems of Economic Geography; and some graduate regional courses. On rare occasions an undergraduate student has been invited to participate in the Fall Field Camp of the Graduate School.

Independent honors projects are under the personal supervision of one of the staff specialists. Such research work must be completed within the semester in which it is started, or proof advanced that the study warrants more time. The staff also conducts an oral examination to ascertain the achievement of an "honors student."

The Alpha Sigma Chapter of Gamma Theta Upsilon, national geography fraternity, provides professional and social affiliations between graduate and undergraduate geography majors.

Courses in Geography

During the academic year 1959-60 the following courses were given: 10, 12a, 16, 191, 20b (Evening College); 201, 214a, 282b, 283b, 285a, 286b, 289a, 291, 298b, 30, 32, 34, 36, 37a, 37b, 300a, 314, 361, 399a.

PRIMARILY FOR UNDERGRADUATES

10. Principles of Geography.

Physical phases of geography and application of principles of geography to selected regions. Open to freshmen. Juniors and seniors admitted only by special permission of the instructor.

MR. WARMAN

12a. Introduction to Climatology.

Practical exercises in meteorology and climatology, use of weather instruments, discussion of various theories. Prerequisite: Geography 10 or equivalent.

MR. WARMAN

16. Economic Geography.

The world's mineral, plant and soil resources with special reference to use and conservation. Prerequisite: Geography 10 or Economics 11, or equivalent.

1959-60 - MR. CAROL

1960-61 - Mr. Birch

191. Cartography and Graphics.

Preparation of maps, graphs, charts, block drawings. Restricted to twenty, see instructor.

MR. BURNHAM

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

20b. Geography in Education.

Geography in the present-day school system; designed to meet needs of those teaching or expecting to teach geography.

MR. WARMAN

25b. Conservation of Natural Resources.

[Not offered 1960-61]

28a. Geography of New England.

[Not offered 1960-61]

Field and lecture course. Prerequisites: Geography 10 and Geology 12.

201. Political Geography.

Major political problems of the world as related to geographic factors and applied to selected regions.

MR. VAN VALKENBURG

214a. Geomorphology. [Offered 1st sem. 1959-60] [Not offered 1960-61]

282b. Regional Geography of North Anglo-America.

MR. SHAW

[Not offered 1960-61]

- 283a. Regional Geography of Middle America.
[Not offered 1960-61] or 1959-60] MR. WARMAN
- 283b. Regional Geography of ^{Latin}South America. MR. WARMAN
- 285a. Regional Geography of Europe. (1959-60) MR. VAN VALKENBURG
- 285^b. Regional Geography of Asia. MR. VAN VALKENBURG
(~~Not~~ offered 1960-61; ~~To be offered 1961-62~~)
- 286b. Regional Geography of Africa. Mr. Carol [Not offered 1960-61]
- 3/289a. Regional Geography of the U.S.S.R. [Not offered 1960-61]
Offered in 1959-60 as 389a MR. VILLMOW
291. Cartography. MR. BURNHAM
- 298b. Map and Aerial Photograph Interpretation. MR. RAISZ
- 300a. Evolution of Geographic Thought. Non credit course. Mr. Carol
Offered in 1959-60 only
- PRIMARILY FOR GRADUATE STUDENTS
30. General Seminar.
Required of all graduate students in residence. STAFF
32. Regional Climatology. MR. VAN VALKENBURG
- 33a. Soils Geography. [Not offered 1960-61] 1959-60 or
34. Land Utilization and Planning.
Physical and cultural factors bearing on purposes and patterns of land use. 1959-60 - MR. CAROL.
1960-61 Mr. Birch
36. Problems in Economic Geography.
Various research fields, research methods, and detailed techniques in mining, agriculture, manufacturing and transportation. MR. MURPHY
37. Human and Cultural Geography.
Distribution of races, artifacts, institutions, cultures; the mutual interaction of physical and cultural geographic impactors applied to regions. MR. WARMAN
314. Regional Physiography of the Western Hemisphere. Mr. Lotz - 1959-60
Two hours lecture and two hours laboratory. Mr. Raisz - 1960-61
315. Regional Physiography of the Eastern Hemisphere.
[Not offered 1960-61]

333b. Biogeography.

1959-60 or
[Not offered 1960-61]

361. Urban Geography.

The modern city from the geographic viewpoint, with emphasis on the American city.

MR. MURPHY

399a. Field Methods and Studies.

The first three weeks of the first semester. Required of every graduate student not yet admitted to candidacy.

STAFF

RESEARCH COURSES

200. Geography in Education.

310. Physiography.

320. Climatology.

330. Soils and Biogeography.

340. Land Use.

350. Agricultural Geography.

360. Economic Geography.

370. Human Geography.

380. Regional Geography.

390. Political Geography.

Department of Geology

INSTRUCTOR LINGNER

The Department of Geology does not at present offer an undergraduate major. The general course is closely related to geography and is usually required for majors in that department. The laboratory, located on the top floor of the Geography Building, is well provided with illustrative material, including displays of minerals and rocks from classic central Massachusetts localities.

Courses in Geology

During the academic year 1959-60, the following courses were given: 12, 121a, 122b.

12. General Geology.

Presents the earth's surface as a result of the work of streams, glaciers, vulcanism, wind, and other geologic agents. Elementary map interpretation and the identification of common rocks and minerals are included. Emphasis in the second semester is on the evolution of landscapes and life through geologic time. Open to freshmen. Three hours of laboratory work or a field trip per week, with one all day trip in the second semester. Field trips are at the student's expense. Indivisible course.

MR. LINGNER

121a. Introductory Mineralogy.

[Not offered 1960-61]

The identification of minerals by their geometric, physical, and chemical properties. Includes elementary crystallography.

MR. LINGNER

122b. Economic Geology.

[Not offered 1960-61]

A study of the major useful mineral deposits, their origin, structural relations, and geographic distribution.

MR. LINGNER

Department of German

PROFESSOR ARNDT, ASSOCIATE PROFESSOR EDWARDS

DEPARTMENTAL OBJECTIVES

The Department of German offers a program of courses having a fourfold objective: 1, facility in the use of the German language (11, 12, 13, 132); 2, a comprehension of the outstanding cultural epochs in German history (141); 3, an integrated knowledge of major German writers and thinkers (152, 153, 161, 162, 164, 165); 4, an understanding of American and German relations in the past and present (200). Concentration in German, as the mother tongue of Central European geographical areas, provides an indispensable background for an intelligent understanding of American interests in Europe, for work in international relations, and in most scientific fields.

MAJORS

Each major in the department will be required to complete certain extra-curricular reading assignments given in a departmental reading list designed to aid the student in reaching the fourfold objective outlined above. All students wishing to major in German should see the head of the department before they register.

EXTRA-CURRICULAR ACTIVITIES

The department sponsors the following organizations:

THE GERMANIC SOCIETY, an organization of students which provides an informal meeting ground for all those interested in the German language and culture. Its programs are regularly announced on the bulletin board and in the student newspaper.

DELTA PHI ALPHA, a chapter of the national honorary German fraternity. Outstanding students of German who have demonstrated their interest in the German language and culture may be invited to become members of the fraternity upon the nomination of the department.

Courses in German

During the academic year 1959-60 the following courses were given: 11, 12, 13, 152, 161b, 165a.

11. Introductory German.

The regular first-year course in German meeting three hours a week through the academic year. Study of pronunciation, vocabulary, elements of grammar, composition and reading of suitable modern German prose. Indivisible course.

MR. ARNDT, MR. EDWARDS

12. Intermediate German.

The regular second-year course in German meeting three hours a week through the academic year. Review of first year grammar, translation from and into German, exercises in written and oral composition, reading of modern German prose. Prerequisite: German 11 or two years of high school German. Indivisible course.

MR. ARNDT, MR. EDWARDS

13. Advanced German Reading.

The regular third-year course in German meeting three hours a week through the academic year. This course completes the undergraduate language requirement in German. Prerequisite: German 12.

MR. EDWARDS

132b Oral and Written German. (2nd sem.) [Not offered 1959-60]

Practice in writing German letters, study of modern prose as a basis for practice in the oral use of the language. May be offered to complete language requirement in German. Prerequisite: German 12.

Mr. Arndt

141. Germanic Civilization.

[Not offered 1959-60]

An illustrated lecture course in English on the literature, history, and the fine arts of the German lands from the Holy Roman Empire to the present day, with special stress laid upon the Reformation, the Age of Enlightenment and the Classical Period.

MR. EDWARDS

152. German Literature I.

[Not offered 1960-61]

A survey of German literary movements from the earliest times to the end of the Classical Period.

MR. ARNDT

153. German Literature II. [Not offered 1959-60, 1960-61]

A survey of German literary movements from the beginning of the Romantic Period to the present.

MR. ARNDT

161b. The German Lyric. [Not offered 1960-61]

MR. ARNDT

162a. Faust.

[Not offered 1959-60]

Goethe's *Faust* (both parts) as the highest poetic development of the Faust legend.

MR. ARNDT

164b. The German Novel of Self-Development. [Not offered 1959-60, 1960-61]

MR. ARNDT

165a. Modern German Drama. [Not offered 1960-61]

The German drama from 1880 to the present.

MR. EDWARDS

200b. German Seminar.

For German majors in their senior year. The work of the seminar will vary from year to year according to the needs of the students.

[Not offered 1959-60, 1960-61] MR. ARNDT

Department of History, Government and International Relations

PROFESSOR LEE, PROFESSOR JORDAN, PROFESSOR HAYDEN,* ASSOCIATE

PROFESSOR COHEN, ASSOCIATE PROFESSOR RAEFF,† ASSISTANT

PROFESSOR GROB

Mr. Abrash, Instructor in History, 1960-61

UNDERGRADUATE WORK

In its undergraduate program the department gives basic courses in the fields of American, European, and British history, American and European government, and international relations. It offers major programs in history or government, and participates in the interdepartmental programs of International Relations and American Civilization.

All departmental majors must take General Education 14, preferably in the freshman year, Economics 11, normally before the end of the sophomore year, and History 205a and b in either the junior or senior year. Majors in government should also take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the student's special interests, but are expected to include at least two upper class courses in this department, in addition to History 205.

Non-majors who have not taken General Education 14 may elect other courses offered in the department with the permission of the instructor, if in his judgment the student has an adequate background for the course.

GRADUATE WORK

The distinctive feature of the graduate work is the emphasis laid upon individual instruction and guidance by means of informal conferences between instructor and student, small classes, and seminars. The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and

* Absent on leave, second semester, 1960-61.

† Absent on leave, 1960-61.

the international relations of the United States, Europe, the British Empire and the Far East.

The program for the degree of Master of Arts is worked out individually with each student who may choose to concentrate upon history, or government, or international relations. All are required to take the departmental seminar (History 30a). For general requirements, see the announcement of the Graduate School.

For the degree of Doctor of Philosophy, which may be taken in history or international relations, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the A.M., and after a conference between the student and the departmental staff. By the end of the same year the student is expected to have completed satisfactorily two of his fields, either by course work or by passing a three-hour written examination in each; and to complete, normally by enrollment in a seminar or similar course, a task of research and writing. In the second year beyond the A.M., or later, the student must complete the remaining four fields, one or two by course or written examination, and the others by an oral examination. This final step constitutes the "preliminary examination" required by the Graduate Board. For language and other requirements, see the announcement of the Graduate School concerning the doctorate.

The doctoral dissertation, written in one of the six fields which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate tests the candidate's expert knowledge of his special field as well as the relation of his dissertation to it.

International Relations. The procedures toward advanced degrees in this subject are the same as those outlined above. Candidates are expected, however, to take work in economics and geography as part of an integrated program to be arranged by the department in consultation with the other departments concerned.

Courses in History

During the academic year 1959-60 the following courses were given: General Education 14, History 202a, 205a, 205b, 21, 212, 23b, 230, 234a, 235a, 274b, 281a, 282b, 30a, 314a, 331.

PRIMARILY FOR UNDERGRADUATES

General Education 14. Europe and the United States since 1500.

For a complete description of this course, see General Education. Required of all majors in the department. *Lee + Campbell 1960-61*
Lee + Grob, 1959-60

12. History of England.

Constitutional history is emphasized particularly in the first semester. Offered in alternate years. MR. JORDAN

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

201b. Intellectual History of Europe, 1700-1900. [Not offered 1960-61] *1959-60 on*

202a. Philosophy of History. [Not offered 1960-61]

Problems of history, including meaning and causation, the ontology of historical being, and the nature of historicism. Prerequisite: One course in history and one course in philosophy; or permission of the instructor. MR. CLIVE

205a. Introduction to Political Philosophy.

A study of the main trends of Western political thought with reference to their underlying social, political and economic realities. Required of all departmental majors. MR. JORDAN

205b. Recent Political Thought.

The conflicting ideologies of our time in their development since the French Revolution. Required of all departmental majors. MR. JORDAN

21. Foundations of Modern Europe. [Not offered 1960-61]

The later Medieval, Renaissance and Reformation periods. Offered in alternate years. MR. LEE AND MR. RAEFF

212. Europe, 1789-1914.

Mainly concerned with political and international developments. MR. LEE

- 22b. Tudor and Stuart England. [Not offered 1960-61]
MR. JORDAN
- 225a. Recent History of the British Empire.
Developments since about 1900. Offered 1960-61 and alternate years.
MR. JORDAN
- 226b. Problems of the New Commonwealth.
A study of selected situations, primarily in Asia and Africa, in which former colonial territories are emerging into independent statehood.
MR. JORDAN
- 23b. Senior Conference in American Civilization.
Required of all seniors majoring in American Civilization. Readings, papers and discussions will help the students review and integrate their course work in this field. In 1960-61, open to all properly qualified students and to be entitled: Approaches to American Civilization.
MR. GROB
230. Social and Intellectual History of the United States.
Beginning with a brief survey of the European background of American ideas and institutions, this course deals with the main currents in American thought and society from colonial times to the present.
MR. GROB
- 234a. American Diplomatic History. [Not offered 1960-61]
From 1776 to about 1941. Offered in alternate years.
MR. HAYDEN
- 235a. The United States in the Twentieth Century. [Not offered 1960-61]
Offered in alternate years.
MR. GROB
- 236a. American Political History, 1828-1877.
Beginning with the election of Jackson, this course will emphasize the development of American political parties, Jacksonian democracy, sectionalism, expansionism, the Civil War, and Reconstruction. Offered in alternate years.
MR. GROB
- 274b. The Modern Far East. [Not offered 1960-61]
Primarily international relations in the region since 1895. Offered in alternate years.
MR. HAYDEN

281a. History of Russia from Peter the Great to the Soviet System.

MR. RAEFF - 1959-60
Mr. Abrash - 1960-61

282b. History of the Soviet System. [Not offered 1960-61]

MR. RAEFF

283a. Historical Development of Eastern Central Europe.

1959-60 or
[Not offered 1960-61]

MR. RAEFF

284a. Topics in Eastern European History.

1959-60 or
[Not offered 1960-61]

MR. RAEFF

PRIMARYLY FOR GRADUATE STUDENTS

30a. Department Seminar.

Introduction to bibliography and methods of research. Required of all first-year graduate students in the department.

MR. LEE AND THE STAFF

314a. European International Relations, 1870-1918.

MR. LEE

331. Problems in the History of the United States.

Individual research topics, supplemented by readings and discussion in the field of United States history.

MR. GROB

GRADUATE READING AND THESIS COURSES

31. Reading } In the History and International

310. Thesis } Relations of Europe.

MR. LEE

32. Reading } In the History and International

320. Thesis } Relations of England and the
British Empire.

MR. JORDAN

33. Reading } In the History of the United States.

330. Thesis }

MR. GROB

38. Reading } In early Modern and Slavic History.

380. Thesis }

MR. RAEFF

Courses in Government

During the academic year 1959-60 the following courses were given: Government 14, 15, 240, 25a, 252b, 341, 351.

PRIMARILY FOR UNDERGRADUATES

14. International Relations.

A survey of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with the Second World War and later events.

1959-60 } MR. HAYDEN
Assisted by MR. BRAJE
1960-61 - Mr. Abrash

15. Introduction to American Government.

A short survey of the theories of the origin and purpose of the state is followed by a study of American government with emphasis on contemporary problems of the federal government.

MR. COHEN
Assisted by MR. DiNUNZIO

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

240. Seminar in International Relations.

Basic ideas and their application to current problems. Required for international relations majors; open to a limited number of others at the instructor's discretion.

MR. HAYDEN
2nd sem. 1960-61 Mr. Abrash

241. International Law and Organization. [Not offered 1959-60]

First semester: the historic principles of international law and their application in the modern world. Second semester: the institutions created to deal with problems of commerce, welfare, and collective security on an international basis. Offered in alternate years. 2nd sem. - Mr. Abrash, MR. HAYDEN

25a. Comparative Government.

[Not offered 1960-61]

The governments and politics of Great Britain and the major European powers. Offered in alternate years. MR. COHEN

251a. American Political Parties.

[Not offered 1959-60]

American party organizations, pressure groups, and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years.

MR. COHEN

- 252b. Introduction to Public Administration. [Not offered 1960-61]
An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered in alternate years. MR. COHEN
- 253b. Municipal Government and Administration. 1959-60^{or}
[Not offered 1960-61]
- 254b. American Constitutional Law. [Not offered 1959-60]
The role of the Supreme Court in the development of policy examined primarily by the case method. Contemporary problems are emphasized. Offered in alternate years.
MR. COHEN

PRIMARILY FOR GRADUATE STUDENTS

- History 30a. Department Seminar. See courses in History.
- 34I. Problems in International Relations. MR. HAYDEN
- 35I. Problems in American Government. MR. COHEN

GRADUATE READING AND THESIS COURSES

- | | | | |
|-------------|---|--|------------|
| 34. Reading | } | In International Relations. | MR. HAYDEN |
| 340. Thesis | | | |
| 35. Reading | } | In American and Comparative Government and Politics. | MR. COHEN |
| 350. Thesis | | | |

Interdepartmental Majors

See announcement listed under "Interdepartmental Majors."

International Relations

See the announcements of the Department of History, Government and International Relations, and those listed under "Interdepartmental Majors."

Department of Mathematics

PROFESSOR BUMER,* ASSOCIATE PROFESSOR GORENSTEIN,† ASSOCIATE
PROFESSOR STUBBE, ASSISTANT PROFESSOR HAYDEN, ASSISTANT
PROFESSOR HARRIS, INSTRUCTOR BEVELHEIMER

UNDERGRADUATE WORK

The Department of Mathematics offers courses leading to an undergraduate major in mathematics, courses necessary for the study of the physical and certain social sciences, and courses for the student who wishes to learn about the fundamental concepts of mathematics primarily for their cultural value.

Five-year courses in mathematics and two-year courses in an allied field of study are required for a major in mathematics. Courses 11, 12, 13, 214 form the basis of a major. If a student shows by attainment test that he is qualified to do so, he may enter Mathematics 12, omitting Mathematics 11.

GRADUATE WORK

The department offers advanced courses leading to the degree of Master of Arts with the program designed to give the student an understanding of the basic concepts of the major fields of mathematics and to fit him for further work in the subject if his talents warrant it.

The offerings should provide the student with the essential training in mathematics needed for positions in the scientific laboratories of government and industry and should be of great value to teachers.

The program for the degree of Master of Arts satisfies the requirements stated in the announcement of the Graduate School. A reading knowledge of one foreign language is required of candidates.

Graduate scholarships and assistantships are available.

* Died March 14, 1960.

† On leave, 1960-61.

Courses in Mathematics

During the academic year 1959-60 the following courses were given: Mathematics 11, 12, 13, 14a, 214, 14b, 17, 215, 216, 222, 223.

PRIMARILY FOR UNDERGRADUATES

11. **Fundamentals of Mathematics.** 1959-60 - Mr. Bumer, Mr. Hayden
An elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal number, the concept of limit and some brief attention to elementary probability and statistical inference. MR. HAYDEN, } 1960-61
with the assistance of MR. CRAMPTON, MR. EDE, AND MR. OLSON.
12. **Calculus.** Mr. Gorenstein, Mr. Hayden, Mr. Stubbe - 1959-60
An introduction to differential and integral calculus, this course is essential to further work in mathematics as well as to work in applications in the natural and social sciences. Prerequisite: Mathematics 11, or its equivalent.
MR. HARRIS, AND MR. BEVELHEIMER - 1960-61
13. **Intermediate Calculus.**
Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals and a brief introduction to differential equations. Prerequisite: Mathematics 12.
MR. STUBBE
- 14b. **Elementary Theory of Numbers.** Mr. Gorenstein, 1959-60
A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Mathematics 12.
MR. HARRIS - 1960-61
- 16a. **Introduction to Geometry.** [Not offered, 1959-60]
Topics from projective geometry, non-Euclidean geometry, and the foundations of Euclidean geometry. Prerequisite: Mathematics 13 or at least a B— in Mathematics 12.
MR. HARRIS

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

214. **Advanced Calculus.**
Topics selected from among partial differentiation, integra-

tion, infinite series, improper integrals, Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 13.

MR. HAYDEN

215. Modern Algebra. 1959-60, Mr. Gorenstein

An introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 12 or consent of instructor.

1960-61 - MR. HARRIS

216. Functions of a Complex Variable. [Not offered 1960-61]

Analytic functions, line integrals, conformal mapping, Riemann surfaces. Prerequisite: Mathematics 214 or consent of instructor.

MR. STUBBE

218. Functions of a Real Variable. [Not offered 1959-60]

Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration, functional analysis. Prerequisite or taken concurrently: Mathematics 214 or consent of instructor.

MR. STUBBE

219. Projective Geometry. [Not offered 1960-61]

Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12 or consent of instructor.

MR. GORENSTEIN

220. Applied Mathematics. [Not offered, 1959-60]

Ordinary and partial differential equations and their applications, vector analysis, infinite series, line and surface integrals, Bessel functions, Legendre polynomials and Fourier series, introduction to functions of a complex variable. Prerequisite: Mathematics 13.

MR. STUBBE

221. Topology. [Not offered, 1959-60]

Point set topology, metric spaces, dimension theory, introduction to algebraic topology. Prerequisite: consent of instructor.

MR. BEVELHEIMER

222. Topics in Analysis.

Content will be changed from year to year to fit the needs of graduate students.

STAFF

223. Topics in Algebra.

Content will be changed from year to year to fit the needs of graduate students. STAFF

225. Advanced Modern Algebra. [Not offered, 1959-60]

Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215. MR. HAYDEN

Department of Philosophy

ASSOCIATE PROFESSOR BECK,* ASSISTANT PROFESSOR CLIVE

Mr. Warren T. Hockenos, Lecturer in Philos., 1st sem., 1960-61

The Department of Philosophy offers courses designed to broaden the student's perspective and help him trace the relations among the various fields of knowledge. These courses may also form the basis of a major in philosophy.

A major in this department consists of four courses in philosophy and three additional courses in related fields. The specific courses in related fields are determined in the light of the student's special interests.

Courses in Philosophy

During the academic year 1959-60 the following courses were given: 11a, 11b, 12, 14a, 15b, 18b, 19a.

11a. Logic and Scientific Method.

The principles of valid reasoning and inductive methods; the application of these principles and methods to the problems of the natural and social sciences; and the consideration of the relation between logic and problems of value. Open to freshmen. MR. BECK

11b. Problems of Philosophy.

The nature and method of philosophy. The application of philosophical method to contemporary personal and social

* On sabbatical leave, second semester, 1960-61.

problems. A detailed analysis of some typical problems in the various fields of philosophy. Open to freshmen.

[1960-61 - Mr. Jefferson]

MR. BECK

12. History of Philosophy.

The movements of philosophical thought from the early Greeks to the present day. First semester: Greek and Medieval Philosophy. Second semester: Modern Philosophy. Not open to freshmen. Prerequisite for second semester: One half-course in philosophy or General Education 14.

1st sem., 1960-61 - Mr. Hockenjos

MR. CLIVE

2nd " " - Not offered.

[Taken by regular college students in Evening Coll.]

13a. Problems of Ethics.

Important ethical theories. Designed to acquaint the student with the problems and scope of ethics, and to aid him in the formulation of an ethical outlook. Offered in alternate years. Open to juniors and seniors. [Not offered, 1959-60]

MR. BECK

13b. Philosophy in Literature.

Man—his nature, relationship to himself, to others, and to God, his values and self-understanding—in continental literature since the late nineteenth century. Philosophical issues to be raised include causation in historical explanation, the emergence and meaning of nihilism, the dynamics of faith and unbelief, the phenomenology of estrangement and loneliness, and the nature of art. Authors studied: Tolstoi, Dostoyevsky, Mann, Kafka, and Camus. Open to juniors and seniors. Prerequisite: One half-course in philosophy.

MR. CLIVE

14a. Social Philosophy. [Not offered, 1960-61]

The principles underlying social structure and functions. The examination of the goals, purposes, norms, and ideals of social process, and the relation of that process to the individual good. Offered in alternate years. Open to juniors and seniors.

MR. BECK

1960-61 or

15a. Philosophy of Religion.

[Not offered 1959-60]

Perennial themes such as the nature of man, the existence of God, literalism versus imagination, and the meaning of providence in history. Readings focused on classics of the Judaeo-Christian tradition with a fair selection from twentieth-century existential and analytic writers. Offered in alternate years. Open to juniors and seniors. Prerequisite: One half-course in philosophy.

MR. CLIVE

15b. Philosophical Anthropology. [Not offered, 1960-61] See #19b, below.

The essential nature of man, his place in nature, culture, and society; the sociology of knowledge and art; and the historical and natural dimensions of the human conditions. Prerequisite: One-half course in philosophy or permission from the instructor.

MR. CLIVE

16. Contemporary Philosophy. [Not offered 1959-60]

Important thinkers representative of modern developments in philosophy, together with emphasis on the historical roots of their thought. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. BECK

17a. Readings in Ancient Philosophy. [Not offered 1959-60, or 1960-61]

Advanced work in the writings of one or more of the important philosophers of the ancient period. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. CLIVE

17b. Readings in Modern Philosophy. [Not offered, 1960-61]

Advanced study of representative thinkers of the modern period. Offered in alternate years. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

MR. ~~CLIVE~~
Beck

18b. History of American Philosophy. [Not offered 1960-61]

A survey of important philosophical ideas in America with emphasis on their relationship to American experience.

MR. BECK

Education 290b. Philosophy of Education. [Not offered 1960-61]

Described in the announcement of the Department of Education.

History 202a. Philosophy of History. [Not offered 1960-61]

Described in the announcement of the Department of History.

READINGS IN ROMANTIC ENLIGHTENMENT (NOT OFFERED, 1960-61)

MR. CLIVE

PHILOSOPHICAL ANTHROPOLOGY (NOT OFFERED, 1960-61)

(LISTED ABOVE AS #15b)

MR. CLIVE

Department of Physics

PROFESSOR ROOPE, PROFESSOR ANDERSON, ASSOCIATE PROFESSOR
GUNTER,* INSTRUCTOR COGEN†

UNDERGRADUATE WORK

The department offers fundamental courses required in preparation for the study of chemistry, biology, meteorology and allied sciences, medicine, dentistry, engineering and science teaching, as well as courses leading to professional or graduate work in physics.

The requirement for a major in physics consists of Physics 11, two courses from Physics 15, 16, 17, 124, either Physics 22 or 23, Mathematics 11 and 12, and Chemistry 11. In addition, electives in physics, mathematics and chemistry are desirable. Students preparing for graduate work should also obtain a good reading knowledge of French and German while in college.

Physics 11 or its equivalent is the normal prerequisite for all other courses in the department. Courses numbered 15 or higher, except 17 and 124, require the use of calculus and should not be elected without consulting the instructor in charge. Courses 15, 17 and 23 each require a limited amount of laboratory work to be done at the discretion of the instructor and at such times as will not interfere with regularly scheduled courses.

GRADUATE WORK

Students whose records are approved by the department may be admitted by the Graduate Board to work leading to the degree of Master of Arts.

Courses in Physics

During the academic year 1959-60 the following courses were given: Physics 11, 15, 16, 17, 23.

* First semester, 1959-60.

† Second semester, 1959-60.

PRIMARILY FOR UNDERGRADUATES

General Education 10. An Introduction to Physical Science. [Not offered 1959-60]

For description of this course see courses listed under General Education. Either General Education 10 or Physics 11, but not both, may be taken for credit.

Mr. Roope

11. General Physics.

Mechanics, heat, electricity and magnetism, wave motion, sound, and light. Indivisible course. Open to freshmen.

1959-60-Mr. Roope

13. History of Physics.

1960-61-Mr. Anderson

Offered irregularly. [Not offered 1959-60, 1960-61] Mr. Roope

15. Heat and Thermodynamics. [Not offered 1960-61]

Thermometry, calorimetry, the thermal properties of matter in the solid, liquid and gaseous states, the laws of thermodynamics, applications to a wide range of phenomena. Prerequisites: Physics 11 and Mathematics 12.

Mr. Roope

16. Optics.

[Not offered 1960-61]

First semester, geometrical optics and its application to various optical instruments. Second semester, principles and application of physical optics. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently).

Mr. Gunter and Mr. Cogen

17. Introduction to Modern Physics.

An elementary treatment of physical experiment and theory of the past sixty years including the more recent atomic and nuclear developments.

Mr. Roope

124. Fundamentals of Electronics. [Not offered 1959-60]

First course in electronics designed to give a broad, largely non-mathematical, background for the understanding of electron tubes and their associated circuits. The application of modern electronic devices to the fields of physics, chemistry, biology, meteorology, and navigation is discussed. Prerequisite: Mathematics 11.

(1960-61) Mr. ~~Gunter~~

Anderson

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

22. Theoretical Mechanics.

[Not offered 1959-60]

Prerequisite: Mathematics 12. Mathematics 13 is desirable but not required.

Mr. Roope

23. Electricity and Magnetism.

[Not offered 1960-61]

The fundamental laws of electric and magnetic circuits and fields, and the elements of electromagnetic wave propagation and their application to antenna design. Prerequisites: Physics 11 and Mathematics 12. Mathematics 13 is desirable but not required.

MR. GUNTER AND MR. COGEN

24. Advanced Electronics.

[Not offered 1959-60, 1960-61]

A detailed theoretical study of certain electronic phenomena from a mathematical point of view. Prerequisites: Mathematics 12 and Physics 124 or Physics 23. Mathematics 13 is desirable but not required. Offered irregularly.

MR. GUNTER

27. Basic Electrical Measurements.

[Not offered 1959-60, 1960-61]

Measurement of voltage, current, frequency, power, capacitance, inductance, resistance, etc., from D.D. to microwave frequencies. Prerequisites: Mathematics 12, Physics 23, Physics 24 or equivalent.

28a. Theoretical Spectroscopy.

[Not offered 1959-60, 1960-61]

The origin of line and band spectra in both emission and absorption spectrophotometry. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently). Physics 16 and 17 are desirable but not required.

MR. GUNTER

28b. Experimental Spectroscopy.

[Not offered 1959-60, 1960-61]

Theory and applications of the optical and electrical instruments used in an experimental spectroscopy, and the principles of spectrochemical analysis. Laboratory practice in the use of prism and grating spectrographs, micro-densitometers, interferometers, and their associated photographic and electrical techniques. Prerequisites: Physics 16 or Physics 28a, and Mathematics 12 (may be taken concurrently). Physics 17 is desirable but not required.

MR. GUNTER

25. Honors Course.

Theoretical and/or experimental work in mechanics, thermodynamics, or nuclear physics.

MR. ROOPE

26. Honors Course.

Theoretical and/or experimental work in optics, electronics, or spectroscopy.

MR. GUNTER

29. **Topics in Advanced Optics.** [Not offered 1959-60, 1960-61]
Theoretical and experimental aspects of topics selected from the following: spectroscopy, polarimetry, communications theory, diffraction theory, lens design, and electro-optics. Prerequisites: Mathematics 13 and Physics 16. Physics 23 is desirable but not required. MR. GUNTER
217. **Nuclear Physics.** [Not offered 1959-60, 1960-61]
MR. ROOPE

PRIMARILY FOR GRADUATE STUDENTS

31. **Theoretical Physics.**
Double course. MR. ROOPE
300. **Research in Experimental Physics.** STAFF
301. **Research in Theoretical Physics.** STAFF

Department of Psychology

PROFESSOR WERNER, PROFESSOR WAPNER, PROFESSOR (AFFILIATE) MORIARTY, PROFESSOR (AFFILIATE) PHILLIPS, PROFESSOR (AFFILIATE) WEINREB, ASSOCIATE PROFESSOR BAKER, ASSOCIATE PROFESSOR CROCKETT, ASSOCIATE PROFESSOR DEMBO, ASSOCIATE PROFESSOR GWINN, ASSOCIATE PROFESSOR KAPLAN, ASSOCIATE PROFESSOR WIENER, ASSOCIATE PROFESSOR (AFFILIATE) BENDA, ASSISTANT PROFESSOR COMALLI, ASSISTANT PROFESSOR KRUS, ASSISTANT PROFESSOR LEVENTHAL, ASSISTANT PROFESSOR LIPTON, ASSISTANT PROFESSOR WOHLWILL, ASSISTANT PROFESSOR BIBACE, LECTURER GOODGLASS, LECTURER KASTENBAUM, LECTURER KOELLA, LECTURER TREHUB, LECTURER VARJABEDIAN, CONSULTANTS TO THE PSYCHOLOGICAL CLINIC: DR. PENTLARGE, PSYCHIATRIST; MISS DEWEESE, PSYCHIATRIC SOCIAL WORKER; DR. FEFFER, CLINICAL PSYCHOLOGIST.

The Psychological Laboratories at Clark University were established by G. Stanley Hall immediately after the founding of the university, and constituted one of the first adequately appointed

laboratories in this field in America. These laboratories increased rapidly in size and in research possibilities for experimental psychology, and have been remodeled in accordance with present needs. From the outset this research emphasis on experimental psychology was supplemented by work in child study, educational psychology, and mental hygiene. In recent years a comprehensive training program in clinical psychology has been added. Broad integrated training in psychology is stressed, with special concentration being provided in the areas of child and genetic, clinical, social, and general experimental psychology; also in experimental approaches to personality and psychopathology.

Associated with the department is the Institute of Human Development, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on pre- and post-doctoral levels in the comparative developmental approach to behavior.

UNDERGRADUATE WORK

The undergraduate curriculum is designed to meet the needs of: (1) students majoring in psychology; (2) majors in related fields; (3) students wishing an orientation to the field of psychology for general cultural development.

Psychology 11a and 11b are prerequisite to all subsequent courses. Majors are required to take Psychology 11a, 11b, and Psychology 212. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE WORK

Work is offered in the department leading to the degrees of Master of Arts and Doctor of Philosophy. In order to be admitted to the department for a graduate degree, the applicant must have a bachelor's degree, based upon a distinguished college record. Where the department feels that a student lacks the necessary undergraduate preparation in psychology and related fields, specific courses of study will be prescribed.

THE DEGREE OF MASTER OF ARTS. To qualify for the degree of Master of Arts in psychology the student must demonstrate competence in representative areas of psychology. The customary program is five courses, including experimental psychology, statistical methods, and three additional courses supplemented by the writing of a thesis in the area of special interest.

THE DEGREE OF DOCTOR OF PHILOSOPHY. Only students who give evidence of high scholastic attainments will be encouraged to proceed to the degree of Doctor of Philosophy. The obtaining of a Master of Arts degree does not automatically admit the student to the doctoral program. The general requirements for the doctor's degree, other than those for specialization in clinical psychology, include the following. The student is required to pass with distinction four courses during the first year of graduate study and a minimum of four courses during the second year of study. He is required at the end of the second year to demonstrate his competence in psychology by passing with distinction preliminary examinations in the field of psychology as a whole and in an area of specialization. At the present time examinations in the general field include history and systems of psychology, experimental psychology, genetic psychology, learning, normal and abnormal personality, social psychology, physiological psychology, and statistics. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable thesis. For formal dissertation requirements and language requirements, see the general statement concerning advanced degrees in the section of this catalog headed "The Graduate School." At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his special area of concentration.

THE PROGRAM IN CLINICAL PSYCHOLOGY. The department offers a four-year program in clinical psychology leading to the degree of Doctor of Philosophy. For this degree the same standards of proficiency in the general field of psychology as mentioned above apply.

In addition the student will be required to demonstrate mastery of the use of clinical methods. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies.

One to two years of internship, or its equivalent, is included in this four-year program. Institutions and agencies cooperating in providing practicum and research facilities are: Bradley Home, Bedford V.A. Hospital; Boston State Hospital; Boston V.A. Hospital; Boston V.A. Mental Hygiene Clinic; Brockton V.A. Hospital; Children's Medical Center, Boston; Clark University Psychological Clinic; Hartford V.A. Mental Hygiene Clinic; Judge Baker Guidance Center, Boston; Lowell V.A. Mental Hygiene Clinic; Northampton V.A. Hospital; Providence V.A. Mental Hygiene Clinic; Rutland Heights V.A. Hospital; Springfield V.A. Mental Hygiene Clinic; Worcester V.A. Mental Hygiene Clinic; Worcester Youth Guidance Center; and the Worcester State Hospital. Internships may be arranged in other selected hospitals and clinics. V.A. and U.S. Public Health Service Training Stipends are available for outstanding students.

During the first two years the student will include in his program courses basic to a thorough understanding of psychology as well as specialized courses in clinical psychology. He will be required to take the regular preliminary examinations; in this case the examination in the area of specialization will be in clinical psychology.

Research for the dissertation should normally be completed during the fourth year at the University. The length of the program will vary depending upon individual circumstances.

Courses in Psychology

During the academic year 1959-60 the following courses, as numbered in the 1959-60 catalog, were given: 11a, 11b, 103b, 152b, 160b, 170, 172a, 201a, 202b, 209, 212, 220a, 230b, 300, 301, 302, 303, 304b, 305, 307, 308a, 309b, 313, 315a, 318, 320, 325, 326, 330b, 331, 333, 336, 338a, 339a, 340b, 342b, 346b, 349, 350, 390. The course numbers, titles and descriptions have been revised in the present catalog.

PRIMARILY FOR UNDERGRADUATES

11a. General Psychology.

An introduction to the principles of human behavior.

MR. WAPNER

11b. General Psychology.

Prerequisite: Psychology 11a.

MR. WAPNER

103b. The Abnormal Personality.

The development of the abnormal personality and a survey of the major types of abnormal behavior. Prerequisite: Psychology 172a.

MR. BAKER

150a. Introduction to Child Psychology.

MR. WOHLWILL

152b. Psychology of Adolescence.

The development of personality during adolescence with special emphasis on personality changes of the adolescent in a modern urbanized culture.

MR. KASTENBAUM

160b. Introduction to Quantitative Methods in Psychology.

Problems of psychological measurement and statistical evaluation of psychological data.

MR. WOHLWILL

170. Social Psychology.

The role of social factors in the behavior of individuals and of groups. Among the topics to be discussed are attitudes, prejudice, leadership, and personality and culture.

MR. CROCKETT

172a. Personality Development.

The various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

MR. BAKER

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201a. Learning and Motivation.

The role of learning and motivation in behavior.

MR. GWINN

202b. The Psychology of Thinking.

Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning, and problem solving.

MR. GWINN

209. Developmental Approaches to Behavior.

The application of developmental concepts to various facets of infra-human and human behavior; emphasis is on the ontogenesis of perception, concept-formation, symbolic activity (including play and speech), etc. in human beings.

MR. KAPLAN

212. Experimental Psychology.

A general survey of experimental psychology with the aim of acquainting the student with scientific methods and laboratory technique. Lecture 2 hours; Laboratory 3 hours.

1959-60 Mr. WIENER, first semester; Mr. COMALLI, second semester
 1960-61 " " " " ; Mr. KRAUS " "

220a. Mathematical Approaches to Psychology.

Intensive analysis of several mathematical models used in psychology. Alternate years. Prerequisite: Math. 12, or permission of instructor. [Not offered 1960-61] MR. CROCKETT

230b. Senior Seminar in Psychology.

Intensive discussion of special problems in psychology.

STAFF

PRIMARILY FOR GRADUATE STUDENTS

301. Experimental Method in Psychology.

Experimental method considered generally and in its application to problems of perception in particular. Lecture 2 hours; laboratory hours to be arranged. MR. WAPNER

302. Statistical Methods.

Descriptive statistics, statistical inference, and experimental design in psychology. MR. CROCKETT

303. History and Systems of Psychology.

Historical development of theories, concepts, and methods in psychology. MR. GWINN

304a. Physiological Aspects of Behavior, I.

Neuro-anatomy as related to behavior. MR. VARJABEDIAN

304b. Physiological Aspects of Behavior, II. (1959-60) Mr. Treub

Neurophysiological aspects of behavior. (1960-61) MR. KOELLA

311. Clinical Methods, I.

Observation, interviewing and testing. MR. LEVENTHAL

OFFERED IN 1959-60, NOT IN 1960-61

300. GENETIC PSYCHOLOGY

MESSRS WERNER & KAPLAN

313. STATISTICAL METHODS

MR. CROCKETT





312a. Theories of Deviant Behavior.

Deviant behavior as viewed by various theories; clinical and experimental evidence is examined. MR. BIBACE

313b. Principles and Concepts Underlying Psychological Tests. - 1960-61

Problems of personality assessment by non-projective tests.

(See preceding page for #313 in 1959-60

MR. TREHUB

315. Advanced Child Psychology. See below [Not offered 1960-61]

Major dimensions and determinants of ontogenetic changes in behavior; methodological problems in the study of children and in the assessment of developmental change. (Given in alternate years.) MR. WOHLWILL

316. Observational Methods in the Study of Children.

Given in alternate years. (Not given in 1960-61.)

(#326 in 1959-60; see below) MR. WOHLWILL AND STAFF

321. Higher Mental Processes.

Experimental research pertaining to such functions as remembering, classifying, problem-solving, reasoning, concept-forming. (Not given in 1960-61, to be given in 1961-62.)

MR. KAPLAN

322. Organismic-Developmental Approaches to Behavior. [Not offered, 1959-60]

Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem-areas in psychology.

MR. KAPLAN

323. Psychology of Learning. [Not offered 1959-60]

Theoretical viewpoints and experiments in the field of learning.

MR. GWINN

324. Theories of Personality.

A comparison of various theoretical approaches to the study of personality.

MR. WIENER

325. Advanced Social Psychology. - 1960-61 (See below for #325 in 1959-60)

Intensive analysis of various theoretical systems in social psychology. (Given in alternate years.)

MR. CROCKETT

326. Mathematical Approaches to Social Behavior. [Not offered in 1960-61]

Analysis of mathematical models in psychology with special reference to psychological scaling. Prerequisite: Psychology 220a. (Given in alternate years.)

MR. CROCKETT

See below
for #326
in 1959-60

COURSES AS OFFERED IN 1959-60, NOT 1960-61

315a. EXPERIM'L METHODOLOGY & DESIGN (NOT OFFERED 1960-61)

MR. WAPNER

325. ADVANCED CHILD PSYCHOLOGY

MR. WOHLWILL

326. OBSERV'L METHODS IN THE STUDY OF CHILDREN

(NOT OFFERED 1960-61)

MR. WOHLWILL & STAFF

331. Clinical Methods, II. (See below for "331 in 1959-60)
Application of various clinical methods in the assessment of
personality. MR. GOODGLASS
- 332b. Theories of Psychotherapy. [Not offered, 1959-60]
A comparison of various theoretical approaches to problems
of psychotherapy. MR. WIENER
- ~~336a. Child Psychology in Relation to General Psychology.~~
Theory and research in child psychology in relation to general
psychological theory. Given in alternate years. (Not given
in 1960-61. *or 1959-60*) MR. WOHLWILL
- ~~337b. Seminar on Problems in Child and Developmental Psychology.~~
(Not offered 1959-60 or 1960-61) STAFF
- ~~341. Seminar on Current Literature.~~
(Not given in 1960-61. *or 1959-60*) STAFF
351. Clinical Methods, III. (Not offered 1959-60 or 1960-61)
Integration of various methods in assessment of personality
and behavior. MR. PHILLIPS
352. Clinical Methods, IV. (Not offered 1959-60)
Application of theoretical principles to psychotherapy.
MR. WEINREB
356. Psychopathology of Childhood. (Not offered 1959-60) MR. BENDA
357. Psychology of Symbolic Behavior. (Not offered 1959-60)
Basic aspects of symbolic behavior; theory, experimental
research, ontogenesis, psychopathology of symbol formation.
MR. WERNER AND MR. KAPLAN
- 361~~b~~. Seminar in Psychological Rehabilitation. MISS DEMBO
(Not offered 1959-60)
- ~~362b. Psychological Problems in Gerontology.~~
(Not given in 1960-61. *or 1959-60*) MR. COMALLI
- ~~363a. Problems in Comparative Psychology.~~
(Not given in 1960-61. *or 1959-60*)
- ~~364b. Selected Problems in Psychopharmacology.~~
(Not given in 1960-61. *or 1959-60*) MR. KRUS
- ~~365a. Problems in the Psychology of Small Groups.~~ 1959-60 *or*
[Not given in 1960-61]

COURSES AS GIVEN IN 1959-60; NOT 1960-61

331 PSYCHOLOGY OF LEARNING

MR. GWINN

336 ADV. PROBLEMS IN PSYCHOTHERAPY

MR. WEINREB

340b PHYSIOLOGICAL PSYCHOLOGY

MR. GWINN

342 RESEARCH PROBLEMS IN CHILD PSYCHOLOGY

MR. WOHLWILL

380. Research in Psychology.

Direction of individual students in their research.

STAFF

381. Readings in Psychology.

Critical analysis of literature in areas related to individual research.

STAFF

385. Participation in Psychological Clinic, I.

MR. BAKER AND MR. WIENER

~~386. Participation in Psychological Clinic, II. (Not offered 1959-60 or 1960-61)~~

MR. BAKER, MR. WIENER, AND MR. LIPTON

~~387. Participation in Psychological Clinic, III. (Same as above)~~

MR. BAKER, MR. WIENER, MR. WEINREB AND MR. MORIARTY

388. Participation in Psychological Clinic, IV.

MR. BAKER, MR. WIENER, MR. WEINREB,
MR. MORIARTY, AND MISS DEWEESE

390. Departmental Colloquium.

VISITING LECTURERS

383 Internship in Clin'l Psych.

Mr. Bibace

384 " " " "

Mr. Wiener

Department of Romance Languages

PROFESSOR REID, ASSOCIATE PROFESSOR KING, ASSOCIATE PROFESSOR
NICOL, ASSISTANT PROFESSOR BARBERA, INSTRUCTOR MARCHANT

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: a lower level and an upper level. French and Spanish 11 and 12 are lower level courses. All other Romance language courses are considered as upper level courses.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding, as well as what may be called basic literacy in the language.

In the upper level the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature, but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

In addition to the primary function of providing liberal education, a well-planned sequence of courses in this field will serve the practical ends of providing a foundation for teaching, a reading knowledge adequate for advanced study in natural science, social science or the humanities, or a speaking and writing knowledge adequate for use in foreign travel or foreign trade.

The departments of modern languages have a modern electronic language laboratory for class instruction as well as for self-study and self-appraisal, available to students in lower level language courses and to others who may wish to work independently. Required of persons taking French and Spanish 11, 12 and 13, and German 11. It is optional for others. For the laboratory fee, see the section, "Tuition and Fees."

A major in Romance languages must comprise:

- (1) Four full courses to be chosen from the following:
French 13, 114, 123a, 151a, 152a, 153b, 154b;
Spanish 13, 114;
Romance Languages 124b.
- (2) French 113 or the equivalent.
- (3) General Education 14, or the equivalent, normally to be completed by the end of the sophomore year.
- (4) At least one course, to be approved by the department, in non-Romance literature.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and in literature.

If at least two units of elementary Latin or elementary Greek have not been accepted for admission to college, a Romance language major must satisfy the classics requirement as prescribed under the heading "Major" in the statement of requirements for the degree of Bachelor of Arts.

Students intending to major in Romance languages should consult Mr. Reid.

A program leading to a degree "with honors in Romance languages" is available to qualified upperclassmen.

Courses in French

During the academic year 1959-60 the following courses were given: French 11, 12, 131a, 14, 114, 113, 151a and 154b.

11. Elementary.

A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple French. Three class meetings and one or two hours in the language laboratory weekly. Open to freshmen. Indivisible course. STAFF

12. Intermediate.

A review of the elements and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading. An intensive oral approach is used in the classroom. Three class meetings and one or two hours in the language laboratory weekly. Pre-requisite: French 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course.

STAFF

*13. Oral and Written French.

A third-year course. Admission is subject to approval of the instructor in each semester. The normal sequence is 13A during the spring semester of one year, followed by 13B the following fall semester. The two parts of the course are organized as follows:

A^b.

[Not offered 1960-61]

Analytical study and practice of the elements of communication in French: basic conversation patterns; the sound, rhythm and tone patterns of French pronunciation; review of grammatical topics; exercises in written expression. Conducted in French. Prerequisite: Grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a

* See footnote on following page.

placement test. Open to freshmen. Offered in the spring semester in alternate years. Two regular meetings and one two-hour laboratory period each week. MR. KING

B^a. (Not offered in 1959-60)

Advanced practice of communication in French. Composition, oral reports, classroom discussion. Conducted in French. Prerequisite: French 13A^b, or equivalent skill, to be determined by a placement test. Not open to freshmen. Offered in the fall semester in alternate years. Two regular meetings and one two-hour laboratory period each week. MR. KING

***14. Readings in French Literature.**

A third-year course. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of novels and plays selected for their literary excellence and broad appeal. Prerequisite: French 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. REID, MR. KING, MR. NICOL, MR. MARCHANT

113. Introduction to French Civilization.

[Not offered 1960-61]

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission is subject to the approval of the instructor. May be counted in fulfillment of the general requirement in fine arts, but not of the requirement in foreign language. Offered in alternate years.

MR. NICOL

114. General View of French Literature.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Prerequisite: Grade of B- or higher in French 13 or 14, or the equivalent.

MR. KING

* Courses 13 and 14 are "third-year" courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study, who intends to take subsequent courses in literature. Both may be taken for credit.

123a. Advanced Language.[Offered in 2nd semester,
[Not offered 1960-61]]

An introduction to the problem of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B- or higher in French 13B or the equivalent. Offered in alternate years. MR. NICOL

***151a. The Middle Ages and the Renaissance.** [Not offered 1960-61]

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years. MR. KING

***152a. Classicism.**

A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years. MR. NICOL

***153b. Romanticism and Realism.**

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years. MR. NICOL

***154b. The Modern Period.**

[Not offered 1960-61]

A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B- or higher in French 114, or the equivalent. Offered in alternate years. MR. NICOL

* For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in chronological order, but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

Romance Languages-124b. Comparative French and Spanish Phonetics.

The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. Prerequisites: Grade of B- or higher in French 13A or Spanish 13; elementary knowledge of the other language. Advised for majors who plan to teach either language. Offered in alternate years.

[Not offered in 1959-60 or 1960-61]

MR. REID

Courses in Spanish

During the academic year 1959-60 the following courses in Spanish were given: 11, 12, 14, 114.

11. Elementary.

A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple Spanish. Three class meetings and one or two hours in the language laboratory weekly. Open to freshmen. Indivisible course.

STAFF

12. Intermediate.

A review of the elements and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading of texts dealing with Spain and Spanish America. An intensive oral approach is used in the classroom. Three class meetings and one or two hours in the language laboratory weekly. Prerequisite: Spanish 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course.

STAFF

*13. Oral and Written Spanish.

A third-year course. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Admission is subject to the approval of the instructor. Prerequisite: Grade of B- or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular meetings and one two-hour laboratory each week.

MR. BARBERA

*14. Readings in Spanish and Spanish-American Literature.

A third-year course. The first semester is devoted to Spanish-

* See footnote on page 198.

American, the second semester to Spanish works. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain. Prerequisite: Spanish 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. REID

114. The Literature of Spain.

[Not offered 1960-61]

A general view of Spanish literature with emphasis on the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Attention is given to political and cultural background. Prerequisite: Grade of B- or higher in Spanish 13 or 14, or the equivalent. Offered in alternate years.

MR. BARBERA

Romance Languages 124b. Comparative French and Spanish Phonetics.
For description see under "Courses in French."

Directory of Students

1959-1960

Names of students are grouped in three lists:

- I (1) — graduate students, undergraduate students and special students in attendance during the regular academic year 1959-1960;
- I (2) — those who were in attendance less than one semester;
- II — those who attended the 1959 Summer School.

Explanation of letters and symbols:

S — Scholar (graduate)	G — geography
F — Fellow (graduate)	H — history, government and international relations
60, 61, 62, 63 — undergraduates	M — mathematics
g — students formally admitted to the graduate school	Ph — physics
s — special students	Ps — psychology
B — biology	* — student in residence during the first semester only
Ch — chemistry	† — student in residence during the second semester only
Ec — economics and sociology	
Ed — education	

State omitted—Massachusetts.

I (1). GRADUATE STUDENTS, COLLEGE STUDENTS AND SPECIAL STUDENTS IN ATTENDANCE DURING THE REGULAR ACADEMIC YEAR

Name	Home Address	Classification	Name	Home Address	Classification
Aareskjold, Helen V., Brooklyn, N. Y.		61	Barton, Melvin I., Worcester		Ps g
Abisamra, Philip J., Worcester		61	Barton, Roger E., Croton-on-Hudson, N. Y.		63
Abladian, Michele H., Worcester		63	Bass, David M., W. Newton		63
Adams, Margaret W., Glens Falls, N. Y.		61	Bates, Richard A., Shrewsbury		60
Adler-Wouters, Helena A., Buenos Aires, Argentina		61	Baum, Nancy M., Clinton		63
Aharonian, Carol I., Auburn		61	Bean, Stephen, Worcester		61
Ahearn, William E., Wassaic, N. Y.		60	Beaudet, Paul R., Gardner		G S
*Ahmad, Altaf, Karachi, Pakistan		G g	Beckwith, David A., Worcester		61
Ahn, Hansook, Seoul, Korea		60	Bedrosian, Peter, Milford		60
Albert, Alice A., Great Neck, N. Y.		61	Begley, John H., Spencer		61
†Al Dabbagh, Abdul W. H., Bagdad, Iraq		G g	Beller, Henry K., New York, N. Y.		60
Alexandrin, Glen, Edmonton, Canada		Ec S	Benecchi, Edward, Jr., Worcester		63
†Alizai, Saeed Khan, W. Pakistan		IR g	Benjamin, David S., Worcester		60
Allan, Thain C., Littleton		63	Benson, Roy A., Jr., Auburn		63
Allard, Frank J., IV, Fitchburg		60	Berenson, Lawrence I., Chestnut Hill		63
Allen, Samuel E., Jr., Richmond, Va.		H F	*Berg, John H., Worcester		61
Almasian, Rosalie, Whitinsville		61	Berger, Peter L., New Haven, Conn.		60
Altman, Charles S., Clinton		61	Bergman, Howard S., West Hartford, Conn.		60
Alzapiedi, Edward J., Clinton		Ec g	Bergstrom, Erika M., Worcester		Ev.
Andersen, Neil R., West Boylston		60	†Beth, Walter H., Holden		s
†Anderson, Dorothy R., Putnam, Conn.		63	Bethune, John L., Baddock, Nova Scotia		Ch g
Anderson, Edward A., Worcester		62	Bianchi, John J., Worcester		61
Anderson, Frederick J., Victorville, Calif.		Ch S	†Bibeau, Mrs. Mary L., Lexington		s
Anderson, Karen A., Worcester		63	Billings, Kenneth J., Webster		61
Anderson, Paul M., Auburn		63	*Bixby, Mrs. Janet M., North Oxford		62
*Andreson, Nicholas J., Worcester		B g	Black, Robert E., Worcester		G S
*Arena, John M., Lynn		M g	Blake, Virgil L., West Groton		62
Aroian, Van M., Worcester		G F	Blakeslee, Elizabeth F., Shrewsbury		63
Arsenault, Lorraine A., Baldwinville		62	Blasco, Richard J., Norwich, Conn.		B g
Assimakopoulos, Michael S., Fitchburg		61	Blew, Robert E., Lehigh, Pa.		H S
Auyang, Mrs. Shih-cheng, Taiwan, China		B S	Blitzer, Herbert L., Mt. Vernon, N. Y.		63
*Backlin, David L., Worcester		s	Blodgett, Ernestine, Peterborough, N. H.		63
†Backstrom, Mrs. Frances G., Worcester		Ed g	Blomstrom, Peter C., Dracut		61
Baker, Bruce S., Sterling		62	Blondin, George A., Boylston		Ch g
Balke, William H., III, Thompsonville, Conn.		63	Bock, Barbara F., Flushing, N. Y.		62
Ball, Mrs. Charlotte L., Boylston		Ed g	Bodansky, Margery, Boston		Ps F
Ballard, Elmer P., Millbury		Ed g	Boehnke, William J., Jr., Worcester		63
Balsamo, Salvatore R., Worcester		62	Bogae, Richard A., Worcester		63
Banning, Harold R., Whitinsville		62	Bogigian, Robert A., Worcester		Ed g
*Barbera, Mrs. Carmelita D., Worcester		Ed g	Bohigian, Theodore A., Jr., Worcester		60
Barnes, Mrs. Caroline B., Sutton		61	Bolan, Richard J., Haverhill		60
Barnes, Prentice A., W. Boylston		s	Borjeson, Robert C., Worcester		60
Barry, Richard D., Gardner		60	Bosshard, Anne M., Melrose		60
Barry, Thomas A., Worcester		s, B g	Botnick, Frima R., Stafford Springs, Conn.		63
Bartels, Robert, Brooklyn, N. Y.		63	Bouffard, Norman A., Worcester		Ch g
Barth, Linda G., Leonia, N. J.		63	Bowles, Janice M., Worcester		62
Bartolomei, Marino J., Franklin		61	Boyd, Josephine O., Greensboro, N. C.		62

Name	Home Address	Classification	Name	Home Address	Classification
Bradbury, Michael R., New Milford, Conn.		62	Christian, Judith E., Oxford		62
Bradley, Joseph F., Bolton		61	Christofferson, Allen M., Jr., South Acton		61
Braje, Wilfred, Bielefeld, Germany		H F	Chupka, John A., East Douglas		Ed S
*Brasch, John J., Clayton, Mo.		63	Church, Bruce T., Irondequoit, N. Y.		63
Breen, George J., Worcester		60	Church, Mildred W., Berkeley, California		60
Brenner, Bruce A., Rockaway Beach, N. Y.		63	Cirillo, Leonard E., New York, N. Y.		Ps g
Brent, Sandor B., Bronx, N. Y.		Ps g	Clark, Phyllis A., Worcester		61
Bridgham, Mrs. Elin V., Paxton		Ed g	Clarke, Duncan L., Ardsley, N. Y.		63
Brodeur, David D., Manchester		G S	Clarke, Eleanor A., Holden		61
Brodsky, Stephen E., Fairfield, Conn.		60	Cocchiarella, John P., Milford		60
Brooks, Bruce J., Worcester		62	Coghlin, Judith, Worcester		Ed g
Brooks, Michael J., Fitchburg		62	Cohen, Bernard N., Kew Gardens, N. Y.		61
Brotherton, Lynda B., Worcester		60	Cohen, Howard D., Worcester		62
Brousseau, Mrs. Alfreda M. Southbridge		62	Cohen, Leah A., Brooklyn, N. Y.		60
Broverman, Inge K., Worcester		Ps g	Colebrook, Elizabeth A., Boylston		61
Brown, Stephen K., Shrewsbury		61	†Collamore, Richard F., Shrewsbury		63
†Bruinsma, Carol L., Worcester		B g	Collier, Janet S., Concord, N. H.		61
Brunelle, Richard L., Worcester		60	Collins, Clyde E., Worcester		61
Bryant, Charles R., Worcester		60	Colman, Jonathan C., Bridgewater, Conn.		62
Bulkey, Peter B., Rochdale		H F	Condon, A(masa) Gerald, Holden		61
Burak, George J., Amherst		Ec g	Connelly, John, Jr., Wakefield		61
Burckes, Margaret L., Sudbury		Ed g	Connolly, Vincent F., Shrewsbury		M g
Burhoe, Brian W., Shrewsbury		63	Connor, Kenneth F., Jr., Worcester		62
Burke, Dominick F., Worcester		60	Conrad, James L., Jr., Dudley		H g
*Busada, Elizabeth A., Washington, D. C.		s	Constantine, Joseph R., Jr., Malden		62
			Conway, Robert D., Worcester		63
*Caiazz, Mario E., Clinton		Ed g	Cook, H(omer) Calvin, Jr., Gloucester		63
†Caine, Mrs. Elizabeth J., Shrewsbury		s	Copeland, Faith B., Newtonville		63
Caldow, George D., Fitchburg		61	Corriveau, Duane J., Spencer		63
Calverley, David S., Worcester		61	†Cotton, Mrs. Florence L., Worcester		63
Camper, Wallace S., Dudley		Ec g	Cotzin, Sumner B., Worcester		M S
Canner, Stephen J., Brighton		Ec S	Courtney, Richard J., Leicester		Ev
Canty, Jane A., Worcester		60	†Couture, Mrs. Barbara A., Spencer		s
Carey, Oliver N., Jr., Montclair, N. J.		63	Coyle, James P., Springfield		63
Carlin, Richard T., Tarrytown, N. Y.		60	Cremer, Herbert S., Stow		61
Carlson, A(rthur) Richard, Worcester		61	Cronan, John F., Auburn		60
Carlson, Paul R., Brookfield		63	Crony, Elizabeth J., Northfield, Vt.		62
*Caron, Henri L., Leominster		Ch g	Cross, Carol E., North Grafton		63
Carroll, Eileen K., Worcester		60	*Croteau, Gerald A., Jr., Millbury		H S
Carstens, Mary M., Old Bridge, N. J.		61	Crouse, David A., Stow, Maine		62
Casa, Carol M., Worcester		63	Cummings, Donald F., Worcester		63
Casey, Thomas M., Durham, N. H.		Ps g	Cunningham, John R., Jr., Worcester		63
Cassidy, James J., Jr., Millbury		61	Curtin, William P., Jr., Levittown, New York		62
Casso, Angelo A., Worcester		62			
†Cederlund, Albert M., Chelmsford		Ec g	Daley, Jacquelyn E., Rochdale		62
Cesna, Eugenia A., Worcester		63	D'Angio, Anita E., Waltham		62
*Chakour, Mitchell, Jr., Worcester		60	Danoff, Sherwood S., Brooklyn, N. Y.		63
Champlin, John L., Worcester		62	Davis, Mary R., Crawfordsville, Indiana		62
Chapman, Curtis L., Worcester		60	Davis, Beverly, Providence, R. I.		60
Chase, Stanley H., Mattapan		63	Davis, Cynthia, Providence, R. I.		63
Check, Maxine H., New York, N. Y.		60	Davis, Robert S., Sterling Jct.		s
Chesnutt, Stephen T., Laughlinton, Pa.		63	Davis, Susan, Mt. Carmel, Conn.		63
Chester, Anthony J., Fitchburg		60			
Chin, Snow Bing, New York, N. Y.		62			

Name	Home Address	Classification	Name	Home Address	Classification
Davison, Raymond R.,	West Brookfield	61	Einstein, Walter B.,	Brookline	63
Dawson, Mary B.,	Palo Alto, California	62	Eisenberg, Paul D.,	Worcester	61
Deedy, Catherine E.,	Westfield	61	Emerson, Alice V.,	Leicester	H g
DeFelice, Kenneth M.,	Wakefield	63	Emptage, Jeffrey S.,	Albany, N. Y.	63
Degen, Sharon L.,	Meriden, Conn.	60	Englund, Robert A.,	Shrewsbury	60
Del Duca, Benedetto,	Caserta, Italy	62	Ephraim, Allan,	Worcester	63
Delechanty, Patricia A.,	Fair Haven, Vt.	62	Epstein, Barry D.	Long Island City, N. Y.	62
*D'Elia, Margaret A.,	Worcester	Ed g	Epstein, Martin B.,	Lawrence, N. Y.	61
Demirjian, Arlene L.,	Bridgeport, Conn.	62	Ericson, Carol K.,	Worcester	Ed g
Denechaud, Virginia M.,	Worcester	Ev	Erickson, Paul A.,	Worcester	63
Denny, Duncan,	Norfolk, Conn.	Ed g	†Erickson, Paul Edward,	Caldwell, N. J.	63
DeRita, David J.,	Pittsfield	62	Erle, Richard A.,	Worcester	Ps g
DeSilva, Rudolph H.,	Shrewsbury	s	Espie, Ellen C.,	Wayne, N. J.	63
De Toma, Francis J.,	Worcester	62	Estabrooks, Charles R.,	East Woodstock, Conn.	Ed g
DeVoe, Anthony M.,	West Palm Beach, Florida	61	Eteson, Donald C.,	Worcester	s
Diamantopoulos, Michael P.,	Worcester	60	Evangelidis, Apostol,	East Douglas	63
Dickman, Michael B.,	Brooklyn, N. Y.	60	Evans, Caroline,	Worcester	61
Di Domenico, Angelo,	Milford	61	Evers, Jane M.,	Pleasantville, N. Y.	60
†DiNapoli, Robert A.,	West Hartford, Conn.	s	Falk, J. David,	Leominster	60
DiNunzio, Mario R.,	Woonsocket, R. I.	H F	*Fallman, Ida O.,	Worcester	Ed g
Dobkin, Ella,	New York, N. Y.	63	Fedus, John R.,	East Paterson, N. J.	63
Dodd, Myrna L.,	Westboro	62	Fein, Jacques,	Union, N. J.	60
†Dolan, Thomas M.,	Auburn	62	Feingold, Marsha A.,	Worcester	61
Dolphin, Donald H.,	Worcester	60	Ferris, Robert A.,	Bronx, N. Y.	63
Dolphin, Thomas J.,	Worcester	H g	Fierer, Eleanor C.,	Worcester	61
Donaghue, John A.,	Wethersfield, Conn.	60	Fine, Arnold M.,	Worcester	60
Donais, Harriet E.,	Easthampton	61	Finkel, Geraldine,	New York, N. Y.	62
Donsky, Maurice E.,	Brooklyn, N. Y.	62	Finster, Joan L.,	West New York, N. J.	61
Dowd, Peter G.,	Worcester	62	Fisher, Herman P.,	Leicester	Ed g
Dowling, Robert M.,	Erie, Pa.	Ps F	Fisher, Mrs. Rose M.,	Worcester	61
Down, Norman E.,	Saugus	62	Fishlin, Barbara D.,	Flushing, N. Y.	61
Downer, Douglas B.,	Worcester	62	Flannery, James W.,	Brookfield	60
Dresdale, Harold J.,	Spring Valley, N. Y.	62	Fletcher, Roy J.,	Alberta, Canada	G F
Drezner, Peter W.,	Bayside, N. Y.	62	Fleming, Daniel J.,	Nantucket	62
Dudey, Norman D.,	Wichita, Kansas	Ch S	Fleming, John J.,	North Grafton	62
Dufault, Roland E.,	Worcester	H S	†Flodman, Ronald E.,	Auburn	s
Dufresne, Ernest D.,	Worcester	60	Florou, Nicholas,	Spencer	60
Dukes, Ruth E.,	Manchaug	62	Flynn, John F.,	Worcester	60
Duncan, Robert G.,	Great Neck, N. Y.	63	*Fogg, Dorothy J.,	Holden	61
Dunkley, George A.,	Worcester	63	Foley, Francis J., Jr.,	Worcester	Ed S
Dunn, Walter C.,	Clinton	63	†Forbes, Paul M.,	Rye, N. Y.	s
Durkin, Edward F.,	Worcester	60	Ford, Dwain L.,	Lancaster	Ch S
DuVarney, Raymond C., Jr.,	Marlboro	62	Ford, George G.,	Worcester	Ed g
Dworkin, Edward P.,	Worcester	63	*Foresti, Attilio I.,	Holden	s
*Dy, Rita,	Sangandaan, Caloocan,	M S	Forman, Cynthia E.,	Worcester	62
Rizal, Philippines			Fort, Peter C.,	Schenectady, N. Y.	62
Ede, Elwood K.,	Worcester	60	Foster, Elaine E.,	Worcester	Ed g
*Edgren, Ronald O.,	Worcester	s	Foster, Sandra L.,	Natick	60
Eidt, Mildred H.,	Worcester	60	Franks, Linda J.,	Lawrence	61
			Fray, Robert F.,	Auburn	62
			Freedman, Stuart R.,	Worcester	62
			*Frem, Mrs. Arlene G.,	Worcester	61
			*French, Margaret C.,	Amherst	61

Name	Home Address	Classification	Name	Home Address	Classification
Frese, Maria L.			Graver, Oliver C., Allentown, Pa.		63
Old Saybrook, Conn.		62	Gray, Mairgreed L., Dudley		62
Friedenthal, Richard, Albany, N. Y.		63	Green, Jon A., Needham		63
†Friedman, Richard D., Worcester		s	Greenberg, Harvey, New Haven, Conn.		60
Frost, Kent S., Worcester		60	Greene, Nancy M., Worcester		61
Fuhrman, Robert A., Forest Hills, N. Y.		62	†Greene, Richard E., Worcester		Ed g
			Greenwald, Ann E., Great Neck, N. Y.		62
Gadavani, Vilaichir, Bangkok, Thailand		61	Grenet, Allen P., New Haven, Conn.		61
Gajary, Bela, Worcester		61	Grey, David P., Brooklyn, N. Y.		60
*Galt, Thomas S., Silver Spring, Md.		62	Griffin, Thomas G., Pittsfield		62
Gannon, John M., Clinton		61	Griffith, Linda P., Worcester		60
Gans, Paul S., Brooklyn, N. Y.		60	*Grigg, Robert L., Worcester		61
Garabedian, Zabelle, Worcester		63	Grillo, Louis P., Worcester		60
Gardner, Francis X., Worcester		60	Grillot, Aleta L., Tiffin, Ohio		G S
Garrry, Ann C., Worcester		Ed g	Groll, David H., Walpole		62
Gaudette, Roland F., Jr., Spencer		61	Gromelski, Bradford A., Barre Plains		61
Gauthier, Kenneth P., Worcester		Ed S	Grossman, Andrew, Yonkers, N. Y.		63
Gawdiak, Ihor George, Cohoes, N. Y.		s, 62	*Groves, Donald E., Worcester		60
Gay, George H., Jr., Southboro		Ph S	Grube, Linda, Putnam, Conn.		60
Geiger, Alan L., Wellesley		62	Grundfast, Lois C., Brooklyn, N. Y.		63
Gelpke, Richard B., Wellesley		63	Grusell, Richard H., Worcester		63
Gemme, Raymond G., Millbury		Ed g	Guertin, Doris G., Worcester		Ed g
George, Robert P., West Boylston		62	Gustavson, Edwin A., Worcester		61
Gerner, Edward W., Herrick, L. I., N. Y.		61			
†Gesensway, Sheldon, Shrewsbury		s	Hagberg, Russell C., Millbury		62
Giannette, Marian F., Worcester		60	Hagstrom, Judith E., Boylston		61
Gillingham, Mary E., Otego, N. Y.		60	Hagstrom, Mrs. Mary F., Worcester		Ps g
Gitten, Martin F., Laurelton, N. Y.		62	Hainsworth, Fenwick R., Northbridge		63
Gleason, Charles K., Hancock, N. H.		63	Hall, Donald L., Worcester		61
†Glick, Allen M., Worcester		63	Hallinan, James M., Worcester		60
Glick, Joseph A., Brooklyn, N. Y.		Ps F	Halloran, Alfreda J., Worcester		Ev
Glodas, Charles E., North Grafton		62	Halpern, Lawrence S., Middletown, Conn.		61
Glodas, Daniel B., Worcester		61	Hamburger, Alan G., Bayside, N. Y.		63
Glodis, Francis A., Worcester		61	Hammar, David H., Paxton		63
Gogol, John M., Westfield		60	Hardy, Anton G., Manchester, Vt.		Ps g
Goldfrank, Lewis R., Thornwood, N. Y.		63	Harriman, Sheldon C., Worcester		M g
†Goldman, Norman H., Worcester		62	Harris, Janet H., Rockfall, Conn.		63
Goldschmidt, Paul R., Winthrop		61	Harris, Norman J., Milford		61
Goldstein, Alan D., Worcester		60	*Harrison, Donald H., Chevy Chase, Md.		61
Goldstein, Stephan A., Bellerose, N. Y.		61	Hartman, Sandra, Newtown, Conn.		61
†Gooch, Bradford C., Worcester		s	Hatch, Alan T., Auburndale		60
Goodlight, James C., Worcester		62	Hawkes, Mrs. Phyllis V., Worcester		60
Gordon, David F., Worcester		62	Hayward, Lewis W., Jr., Worcester		61
Gorenstein, Paula, Newton		63	†Heinrich, William R., Jr., Oakham		61
Gottlieb, Mrs. Selma B., Worcester		M g	Heller, Ross E., Bayside, N. Y.		63
Goulart, Joyce F., Wallum Lake, R. I.		62	†Henry, Lehman L., Honolulu, Hawaii		G g
Gouron, Ronald E., Riverdale, N. Y.		62	Henry, Nancy E., Auburn		60
Grace, Stephen E., Worcester		61	Henshaw, Susan S., Millbury		s
Grady, Daniel M., Worcester		62	Hernandez, José A., Zaragoza, Spain		s
Graham, Ian K., Cumberland, R. I.		61			
Graham, John E., Worcester		63	*Herring, Rochelle B. Bala Cynwyd, Pa.		63
Graham, Robert C., Worcester		62	Herschman, Mrs. Judith S., Worcester		60
Grandone, Emmet J., West Sutton		62	Herson, Joanne V., Lakewood, N. J.		63
Grandone, Mrs. Roberta, Barre		Ed g	Higgins, Mrs. Beverly M., Worcester		61
Grandone, Roy F., Barre		Ed g	Hillner, Linda R., Clinton		61
Granger, Nancy L., Leicester		60	Hjelm, Phyllis A., Ashburnham		62

Name	Home Address	Classification	Name	Home Address	Classification
Hodge, Harold C., Worcester		63	†Johnson, Nancy A., Worcester		Ed g
*Hodgman, Mrs. Joyce, Worcester		61	Johnson, Robert F., Rutland		61
Hoffman, Anne B., Monroe, N. Y.		62	Johnson, Roger, Glastonbury, Conn.		60
Hoffman, Phyllis E., Worcester		63	Jolicoeur, Jacques L., Worcester		62
Hogan, Eugene F., Oxford		60	Jolie, Richard N., Auburn		Ed g
Hollman, Stephen N., Brookline		63	Josephson, John A., Jr., Holden		61
Hollow, Doralee, Gouldsboro, Pa.		62	Judge, Janet D., Worcester		Ed g
*Holloway, Margaret F., Worcester		61			
Holloway, Mary J., Worcester		62	Kagan, Andrew, Englewood, N. J.		63
Horne, Burton, Waban		60	Kain, Stephen H., Lynbrook, N. Y.		62
Horton, Graham B., Manhasset, N. Y.		62	Kalinowski, Joanna S., Worcester		62
Horvitz, Barbara G., Providence, R. I.		63	†Kalinowski, Barbara A.,		
*House, Peter W., Worcester		Ec S	Trumbull, Conn.		61
Howatt, Benjamin F.,			Kallio, Rhoda J., Shrewsbury		60
Farmington, Maine		G S	Kallio, Mrs. Signe M., Worcester		Ed g
Huck, Susan L., Forset Hills, N. Y.		G F	Kaminski, Edward R., Worcester		60
Hufault, Armand D., Jr., Brimfield		63	Kang, Kwang J.,		
Huhtanen, Robert J., Weymouth		G S	Kwangju, Korea		Ch S
Humphries, Ogretta A.			Kaplan, Warren J., Worcester		62
Washington, D. C.		Ps g	Kappel, Gertrude, Pine Plains, N. Y.		62
Hunter, Judith, Shrewsbury		61	Karcasinas, Katherine S.,		
Hunter, Rudolph R.			Southbridge		61
London, England		Ec S	Kasparian, Cynthia, Whitinsville		60
Hurwitz, Steven L.,			Kasper, Michael B., New Haven, Conn.		63
New Haven, Conn.		63	Katz, Herman N., Lakewood, N. J.		60
			Kaufman, Karen L.,		
Iatrides, John O.,			Westmount, Que. Canada		63
Thessalonike, Greece		H F	Kazeroid, Francis J., Portland, Conn.		62
Ingalls, Curtis J., Leominster		Ed g	†Kee, Woo Sik, Seoul, Korea		Ec S
Ingraham, Martha J., Worcester		60	Keerson, Sondra M., Larchmont, N. Y.		63
Innamorati, Arthur T., Jr., Clinton		63	*Keil, Elizabeth N., Great Neck, N. Y.		63
Iritani, Toshio, Tokyo, Japan		Ps F	Keim, David L., Ironia, N. J.		61
			Kellner, Harold, Worcester		Ps g
Jackson, Mrs. Jane L., Worcester		61	Kelly, Dean W., New Milford, Conn.		62
*Jackson, Paul E., Summit, N. J.		61	Kempler, Bernhard, Worcester		Ps g
Jacobs, Leonard J.,			Kenneway, Ernest K., Jr., Worcester		61
Belle Harbor, N. Y.		62	Kent, Lillian W., Leominster		G g
Jacobs, Leonard Steven,			*Kesslen, James M., Worcester		60
Lawrence, N. Y.		61	Keuper, Harold F.,		
Jacobson, Harriet C.,			Waukesha, Wisconsin		G S
Jackson Hts., N. Y.		63	Khan, Mirza M., Hyderabad, India		Ch F
Jacobson, Lester B., New Haven, Conn.		63	Kiley, Richard P., Clinton		63
Jaffee, David, Worcester		s	†Kim, Hyon B., Taejon, Korea		Ec S
Jakubauskas, Henry L., Worcester		Ch g	Kim, Hyoungman, Seoul, Korea		Ch S
Jakubauskas, Raymond R., Worcester		63	†Kingdon, Bruce W., Holden		s
Jarest, Helen B., Townsend		61	Kirschner, Clifford J.,		
Jed, Bruce G.,			Woodmere, N. Y.		61
Rockville Centre, N. Y.		63	Kirshenbaum, Allen M.,		
Jenkins, Judith A., Albany, N. Y.		60	Providence, R. I.		61
Jensen, Christian D., Ridgefield, Conn.		62	Kiuru, Ellen E.,		
Jindal, Satya P., Punjab, India		Ch S	West Palm Beach, Fla.		s
*Joachim, Tibor L., Worcester		Ch g	Klarner, Walter, Jr., Clinton		63
Joblin, Robert L.,			Klein, Barbara, Brooklyn, N. Y.		Ps S
West Hartford, Conn.		H g	Klein, Stanley D., Westwood, N. J.		Ps g
Johnson, Carle A., Jr., Laconia, N. H.		H g	Knabe, Faith M., Springfield		62
Johnson, Carolyn R., Leicester		62	Kokernak, John F., Worcester		60
†Johnson, Lois R., Worcester		s	Koki, Arthur S., Worcester		60

Name	Home Address	Classification	Name	Home Address	Classification
Kolligian, Carole N., Worcester		62	Levine, Lila S., Leominster		s
Konheim, Arnold G., Linbrook, N. Y.		63	Lewandowski, Frances C., Worcester		61
†Kopp, Mrs. Seta, Worcester		s	Lewis, Lawrence T., Worcester		G S
*Koppetsch, Kurt,			Lightfoot, William I.,		
Remscheid-Hasten, Germany		61	Watch Hill, R. I.		60
Korman, Stephen B., New Haven, Conn.		63	Lingner, Mrs. Sally M., Worcester		Ed g
Kosiba, Henry J., Jr., Uxbridge		63	*Lisser, Richmond W., Montreal, Canada		61
Kourey, Roger N., Worcester		63	Little, Laurie A. Chappaqua, N. Y.		63
Kramarz, Robert M., Whitinsville		61	Livingston, Richard J., Reading		63
Krasnow, Michael S., Brooklyn, N. Y.		63	Ljungberg, Doris R., Worcester		Ed g
Krauss, Jean C., Norwich, Conn.		60	Ljungquist, Ross, Worcester		61
*Krebs, Margery, New York, N. Y.		62	Locke, Sandra, Worcester		60
Kroll, Arthur M., Whitinsville		62	Lodge, John V., Gloucester		62
Kroll, Juergen K., Worcester		63	*Lohman, James S., Auburndale		G F
†Kronberg, George H., Worcester		Ch g	Lonnroth, Nancy M., Shrewsbury		61
Krutzy, Judith M., Worcester		61	Looker, Robert B., Lynn		G S
Kuma, Nathan N.,			Loughlin, James C., Bronx, N. Y.		Ec S
Ghana, West Africa		62	†Lovely, George H., Jr., Auburn		63
Kunen, Robert J., Marlboro		63	Lowe, Roland C., Lakewood, R. I.		Ps g
Kwan, Stephen C.,			Lumb, Sandra L., Wallingford, Conn.		63
Berkeley, California		Ch S	Lundquist, Donald F., Worcester		60
Labaire, Michael P., Auburn		62	Lundquist, Marilyn B., Holden		61
Lacerte, Eugene P., Springfield		63	Luongo, Dona R., Fitchburg		60
LaChance, Wilfrid R., Leicester		61	Luparelli, Edward A., Worcester		63
LaFosse, William D., Fitchburg		60	Lurie, Steven, Hewlett, N. Y.		61
Lamothe, Richard R., Spencer		63	†Lusk, Robert K., Southbridge		s
Lamoureux, Kent B., Worcester		60	†Lussier, Paul R., Fitchburg		Ed g
*Lane, Caroline, Worcester		Ed g	*Lyford, Deborah, Sturbridge		63
Langer, Jonas, New York, N. Y.		Ps g	Lynch, Jeannette S., Brookfield		s
Langille, James E., Worcester		61	*Lyon, Anthony E., Franklin		60
*LaPierre, Robert E., Worcester		61			
*LaPointe, Donald R., Chester, Vt.		s	MacDonald, Russell E., East Walpole		63
Larson, Robert O., Worcester		62	MacGilvray, Daniel R.,		
Laszlo, Phelps T., Southport, Conn.		B g	South Portland, Maine		H F
Latham, David J., Reading		63	Mack, Norman B., Lynbrook, N. Y.		62
*Lavent, Burton A., Arverne, N. Y.		61	Macklow, Irwin B., Milford		Ed g
Law, Byron R., Conshohocken, Pa.		62	Mackown, Stuart A., Concord, N. H.		60
Lawford, M(argaret) Ellen,			MacPhee, Gordon W., Holden		63
Laughlintown, Pa.		61	MacRitchie, Cynthia G., Ashland		60
Lawson, Christian,			Madnick, Ronal C., Worcester		Ed g
Ghana, West Africa		63	Mahoney, Mary E., Worcester		60
Lawson, Elizabeth W., Binghamton, N. Y.		63	†Major, McDonald M.		
Lawton, Roger D., Pawtucket, R. I.		62	S. Rhodesia		63
Lebeaux, Mrs. Thelma, Worcester		s	Makin, Barbara R., Towaco, N. J.		63
*Lee, Francis M., Brooklyn, N. Y.		62	Maldarella, Daniel, Fitchburg		62
Lee, Melissa D., Hong Kong, China		62	Maniatis, Christina G., Braintree		62
Lee, Rowena J., Hong Kong, China		62	Mank, Herman L., Jr.,		
†Leeds, Jeffrey W., Jupiter, Florida		62	So. Ashburnham		60
Lefferts, Michael, Mt. Vernon, N. Y.		62	Marcucci, Louis E., Portland, Maine		H S
Lehmann, Jeffrey, Teaneck, N. J.		63	Mardirosian, Iris G., Holden		63
Leith, Mrs. Barbara K., Worcester		Ed S	*Markham, Robert A., Lunenburg		s
Leonard, Louise R., Shrewsbury		60	Marsden, Peter V., Spencer		62
Leonard, Thomas J., Worcester		62	Marsland, David W., Attleboro		63
Lepkowski, James W., E. Templeton		62	Marsters, Martha S., North Grafton		63
Letendre, Jean B., Worcester		Ch g	Martin, Ann F., Worcester		61
Levine, Leonard R., Nyack, N. Y.		62	Martin, Arthur H., So. Boston		63

Name	Home Address	Classification	Name	Home Address	Classification
Martin, Jeanne C.,			Mueller, Arthur L.,	Branford, Conn.	62
Wassenaar, Holland		63	Murphy, Michael G.,	Wethersfield, Conn	61
Martin, Jerome L.,	Worcester	61	Murray, Gary R.,	Worcester	60
†Martin, Mrs. Susan P.,	Southboro	62	Murray, John P.,	Nantucket	61
Masing, Ulv,	Worcester	60	Murray, Judith L.,	Winchester	63
Mason, Mrs. Ina C.,	Worcester	H g	Murray, Mary J.,	Worcester	61
Matern, Walter E.,	Worcester	s	Murray, Robert E.,	Washington, D. C.	63
*Mathews, Thomas F.,	Worcester	s	Myers, Claire G.,	Asbury Park, N. J.	62
Mason, Richard,	Worcester	61			
Matsuo, Taku,	Fukuoka-Ken, Japan	Ch F	Nair, Patricia J.,	New Britain, Conn.	Ps g
Matuszek, John M., Jr.,			†Naumes, James,	Marlboro	63
North Grafton		Ch F	Navickas, Margaret A.,	Worcester	61
McAnern, Richard G.,	Andover	61	Nelson, Charles H.,	Worcester	60
McCarthy, Timothy,	Methuen	62	Neubauer, Michele A.,	Norwalk, Conn.	63
McClean, Linda A.,	Warwick, R. I.	62	Nichols, David A.,	Leominster	61
*McClinton, Willa L.,	Newark, N. J.	62	Nidorf, Louis J.,	Worcester	Ps g
McCune, Jay E.,	Cambridge	60	Nightingale, Ray W.,	Houlton, Maine	60
McElwee, Theodore R.,	Northboro	61	Nodine, Ralph H.,	Templeton	Ed g
McEvoy, Joseph E.,	North Brookfield	63	Norelli, Patricia A.,	Pittsburgh, Pa.	63
McGivney, Raymond J., Jr.,	Auburn	61	Norton, Donald H.,	Manchester, Conn.	H F
*McGrail, Walter J.,	Clinton	s	Noshkin, Victor E., Jr.,	Worcester	Ch S
McGrath, Richard D.,	Worcester	Ec S	Nutter, Loren E.,	Leominster	63
McGuire, Patricia A.,	Worcester	Ed g			
*McHugh, Catherine M.,	Worcester	s	Oakes, Mrs. Nancy H.,	Holden	60
McKenzie, John R.,	Boston	H g	O'Brien, Carol A.,	Northboro	63
McKinley, Carol J.,			O'Connor, Gerald P.,	Worcester	60
Westbrook, Maine		62	Oertly, Frederick J.,		
McLeod, Duncan E.,	Clinton	61	Norwalk, Conn.		60
McMaster, Paul,	Worcester	Ch g	O'Halloran, Thomas J.		Ev
†McNamara, Edna A.,	Worcester	Ed CF	O'Janne, Linda A.,	Paxton	61
McNicholas, Sheila A.,	Chatham, N. J.	63	Oliver, Mary E.,	Holden	62
*Mellquist, Marjorie A.,	Worcester	Ed g	Oliver, Richard E.,	Worcester	61
Meltzer, Glenn A.,	Worcester	62	Olsen, Stefan L.,	New York, N. Y.	63
*Melvin, Paul A.,	Worcester	H g	*Olson, David Q.,	Worcester	62
Meshorer, Joel H.,	Newton	63	Olson, Richard V.,	Worcester	M S
Messier, Donna L.,	Saundersville	61	O'Malley, Alice T.,	Clinton	B g
Meyerson, Rochelle E.,			Osterholm, Nancy J.,	Worcester	63
New Haven, Conn.		63	Osterroth, Peter H.,	Fitchburg	62
Migliozzi, Casto A.,	Worcester	62	Otremba, Edward D.,		
†Miles, Robert F., Jr.,	Holden	63	Lackawanna, N. Y.		Ch S
Miller, Nancy H.,	Jersey City, N. J.	63	Ozols, Austra,	Manchester, Conn.	61
Minasian, Frank S.,	Shrewsbury	61	Packer, Peter D.,	Pelham, N. Y.	63
Mitchell, Jeffrey M.,	Fitchburg	61			
Mitchell, Richard E.,	Worcester	62	Palmer, Geraldine R.,	Bel Air, Md.	62
Monroe, Paul B.,	Newton	63	Panella, Joseph P.,	Framingham	s
Mont, George E.,	Worcester	Ch g	Pang, Gerrit A.,		
†Montigny, Marie L.,	Southbridge	61	Honolulu, Hawaii		61
Mooney, Robert E., Jr.,	Worcester	61	Pantos, Ernest J.,	Worcester	60
Moore, Gordon S.,	Roanoke, Va.	62	Paparella, Catherine A.,	Worcester	61
Moore, Ralph R.,	Lawrence	IR S	Parnell, Francis W., Jr.,	Millville	61
Moore, Thomas R.,	Princeton	63	Parslow, Richard F.,	Webster	61
Morey, Clarence A., Jr.,			Pasceri, Gregory J.,	Worcester	60
White Hall, Maryland		G S	Paskevich, Michael P.,	Nashua, N.H.	61
Morrison, Richard A.,	Lincoln, R. I.	61	Passler, Richard D.,	Lawrence	61
Morro, Arleen J.,	Manchaug	62	Pasternack, David,	Mt. Vernon, N. Y.	62
Moscofian, Nancy,	Whitinsville	60	Patashnik, Sanford L.,		
Mourginis, Constantine,	Holden	Ed g	Spring Valley, N. Y.		62

Name	Home Address	Classification	Name	Home Address	Classification
Pavia, John R., Jr., Worcester		H F	Repaci, Dorothy A., Byram, Conn.		63
*Pavini, Amadeu W., Jr., Worcester		Ed g	Reseska, Richard W., Northport, N.Y.		G S
Pearlman, Richard L., Bronx, N. Y.		63	Reynolds, Mary E., Olean, N. Y.		62
Pellegrini, Robert J., Worcester		63	Rho, Mann Que, Seoul, Korea		60
Pepin, Frances M., West Boylston		60	Rhodes, Helen W., West Upton		s
Perkins, Alan W., Worcester		H S	Richmond, Bradford L., Taunton		60
Pero, Perry R., Worcester		61	Riddhagni, Fuanglada,		
Perry, Robert J., Millbury		62	Bangkok, Thailand		62
Peters, R(obert) Norman, Worcester		61	Rigolo, Richard D., Clifton, N. J.		61
Petridis, Harry G., Hyannis		61	Robinson, Andrew H., Worcester		s
Phaneuf, Donald R., Worcester		61	Robinson, Rebecca, Yarmouth, Maine		62
Phelps, Dena M., Worcester		63	*Rodier, Louis T., Oxford		62
*Philips, Deborah C., Worcester		63	Rogstad, Barry K., Winchendon		62
†Picard, Eugene D., Spencer		Ed g	Rome, Noel M., Worcester		62
Pickel, Helge W., Worcester		63	Romo, Charles D., Peabody		60
Pierson, Richard W., Cleveland, Ohio		H S	Ronberg, James F., Woodbridge, Conn.		60
*Pinate, Mrs. Elena C., Panama, Rep. of Panama		H g	Rosenbluth, Alice F., Brooklyn, N. Y.		63
*Pinate, Ernesto, Panama, Rep. of Panama		Ec g	*Rosenkrantz, Paul S., Springfield		Ps g
*Pinkus, Frances A., Worcester		61	Rosin, Norman L., New Haven, Conn.		63
*Piper, David W., Whitinsville		63	Ross, Barbara L., Miami, Florida		60
Pitt, John R., Worcester		Ed g	Ross, Lois R., Worcester		61
Pockel, Stephen T., West Medway		63	Rossley, Paul R., Leicester		60
Polakoff, Keith I., New York, N. Y.		63	Rothenberg, Nan Willa, New York, N. Y.		63
Pond, Thomas W., Grafton		62	Rotman, Steven, Worcester		60
Potash, Marilyn L., Worcester		63	Rounds, Charles E., Jr., Wilmington		61
Pratt, Bruce S., North Grafton		62	Rousseau, Donna M., Gardner		61
Priestley, Walter E., Leicester		61	Roy, Alan F., Worcester		60
Principe, Maria K., Worcester		62	Rubin, Judith C., Bridgeport, Conn.		62
Prouty, Wayne D., Auburn		62	Rubinstein, Joann, New York, N. Y.		63
Prouty, Joel W., Auburn		61	Ruby, Armand, Jr., Worcester		Ch S
Pucilauskas, Dolores D., Worcester		62	Ruch, Lawrénce S., Worcester		63
Pucilauskas, JoAnn G., Worcester		61	Ruddy, Edward R., Worcester		60
Pulaski, Joan R., Worcester		61	Ruddy, Francis H., Worcester		63
			Ruebin, Dorothy E., Manchester, Conn.		62
			Rugh, Patricia J., Manlius, N. Y.		60
			Russell, Lorraine C., Lincoln Park, N. J.		63
			Ryan, J(oseph) Gerald, Methuen		60
*Qadir, Abdul, Karachi, Pakistan		Ec F	Ryan, Virginia W., Worcester		63
Raab, Elsa C., Waban		63	Sack, Linda H., Worcester		63
Raabe, John A., East Hartland, Conn.		63	St. Pierre, Paul L., Shrewsbury		62
Rafey, Bruce S., Swampscott		63	St. Pierre, Thomas E., Worcester		63
Ragaini, Richard C., Norwalk, Conn.		63	Saladini, Joseph J., Leominster		62
Rajan, Krishnaswamy S., Pondicherry, South India		Ch S	Salvin, Jacob G., Worcester		60
Ranch, David J., Worcester		62	Salvin, Leonard G., Worcester		60
Rand, George, Bronx, N. Y.		Ps S	Salzer, Doris D., Worcester		Ed g
Rappaport, Michael K., Brooklyn, N. Y.		62	*Samaha, Rose M., East Millbury		s
Rawden, Fiske E., Brighton, Mich.		G S	Sandholm, Elizabeth A., Brooklyn, Conn.		61
Rawson, Frederick C., Honolulu, Hawaii		61	Sandman, Louis M., Worcester		61
Redford, Harvey R., Far Rockaway, N. Y.		60	Santoian, Barbara A., Worcester		60
*Reilly, James A., Worcester		Ph g	Sarando, Stephen P., Worcester		62
*Reilly, Michael D., Gardner		63	Sargent, Bradford H., Charlton		60
			Sargent, Harold R., Berlin		63
			*Sargent, Robert A., Shrewsbury		s
			Savage, Marcia A., Worcester		61
			Savage, Sandra R., Worcester		61

Name	Home Address	Classification	Name	Home Address	Classification
Sayre, Joanna M., Worcester		61	Smith, Venice M., West Upton		61
Schein, Rita H., White Plains, N. Y.		62	Sofro, Stephen B., Providence, R. I.		63
*Scherrer, Gail F., Great Barrington		61	*Solomon, Melvin R., Worcester		61
Schiller, Peter H., Worcester		Ps g	Solovay, Mark L., Brooklyn, N. Y.		63
†Schindler, Mrs. Sali, Worcester		s	Sommer, Sigfried, Worcester		60
Schlosberg, Muriel A., Mt. Vernon, N. Y.		62	Southworth, William A., Amenias, N. Y.		61
Schnall, Melvyn, New York, N. Y.		Ps g	Souza, Alfred, Jr., Worcester		61
Schneiderman, Martin D., Malden		63	Spector, Harvey B., New Haven, Conn.		60
Schofield, Edmund A., Jr., Worcester		62	Sperl, Judith A., Holden		63
Schotte, David A., Worcester		63	*Spiegelman, Arthur, Bronx, N. Y.		61
Schunmann, William C., Jr., Millbury		61	Spitzner, E. Peter, Orange, Conn.		62
Schwartz, Estelle B., Brooklyn, N. Y.		Ps S	Sprague, Walter H., Leicester		62
†Scobey, Robert P., Woonsocket, R. I.		s	Sprott, Gwendolyn R., Charlton		60
Scott, Cornelia, Andover		61	Stannard, George E., Paxton		M g
†Scott, Harley E., Worcester		G g	Steidle, Carolyn A., Cincinnati, Ohio		G S
Scrimgeour, James R., West Boylston		62	Steiman, Philip, Worcester		60
Scruggs, Marie L., Detroit, Michigan		63	Stein, Robert A., New York, N. Y.		61
Sears, Richard D., Williamstown		60	Stein, Steven H., Flushing, N. Y.		61
*Seidenstein, Carole P., Yonkers, N. Y.		63	Steinberg, Judith E., Brooklyn, N. Y.		63
Selter, Joyce H., Woodmere, L. I., N. Y.		63	Steinmann, Daniel B., New York, N. Y.		63
Semone, Ronald C., Worcester		60	Steinmetz, Marilyn L., Worcester		62
Senger, Jean A., W. Hartford, Conn.		63	Stenmark, Erik E., Worcester		60
*Sentance, Wayne R., Worcester		61	Stepanski, Anthony F., Jr., Jersey City, N. J.		63
Severtson, Dale, Boone, Iowa		G F	Stillman, Michael A., New York, N. Y.		63
*Seymour, Susanna L., Worcester		Ed g	Stone, Martin C., Keene, N. H.		62
Shaloviejus, Diana A., Worcester		63	Stressenger, Richard F., Sharon		62
Shaw, Douglas B., Westboro		Ev	Striar, Eliot G., Worcester		62
Shearer, Susan T., Manchester, Conn.		62	Stropp, Richard J., III, Rome, N. Y.		61
Sheets, James A., Clarksville, Pa.		IR g	Sugarman, Ethel M., Worcester		62
Shepherd, Marion H., New York, N. Y.		Ps S	Suh, Sang Y., Seoul, Korea		62
Sherman, Mark M., Worcester		62	Sullivan, Anthony R., Springfield, N. J.		61
Shields, Rosemary, No. Westport		60	Sullivan, Joyce P., Auburn		62
Short, Allan M., Newton Centre		63	*Sullivan, Tandy L., Pascoag, R. I.		H g
Shuman, Mark D., Milton		62	*Summers, Richard E., Syosset, N. Y.		60
Shumsky, Barbara, Bronx, N. Y.		Ps S	Suna, Rosalyn C., Brooklyn, N. Y.		63
*Sibley, Caroline N., Worcester		61	Sutherland, Claudia A., Worcester		62
Sickler, Harry A., Williamstown, N. J.		G S	Svenson, John A., Worcester		60
Sidel, Joel L., Pawtucket, R. I.		63	Swartz, Conrad M., Worcester		63
Siegel, Aaron H., Worcester		62	†Sweeney, William B., Jr., Providence, R. I.		Ec g
*Siegel, Charles P., Mount Vernon, N. Y.		63	Swenson, Norman C., Worcester		61
Silver, Mrs. Lois F., Worcester		60	Swierad, Frank, Jr., Uxbridge		61
†Silver, Michael, Worcester		Ed g	Swierz, Margaret, Uxbridge		63
Silver, Richard P., Worcester		63	Swift, William G., Northampton		63
Silverzweig, Stanley, Worcester		60	Swope, C(harles) Hermas, Barre		61
Simes, Anne R., Shrewsbury		60	Szynalska, Hedwig, Bridgeport, Conn.		B S
Simonian, Edward, Worcester		62			
Simor, Luciana, Kew Gardens, N. Y.		Ps F	Tancrell, Patricia A., Uxbridge		61
Singh, Govind S., Allahabad, India		G F	Taylor, Avis M., Williamstown		63
Skinner, Suzanne I., Leominster		62	Taylor, John S., Methuen		62
Skulthai, Pichai, Bangkok, Thailand		62	Temple, Judith M., Upton		62
Slattery, John R., Worcester		Ed CF	†Terlaje, David S., Agana, Guam		s
Smalle, Judith L., Rowayton, Conn.		63	Terrio, Frederick J., Worcester		60
Smith, Carol G., Auburn		60	†Tetreault, Philias M., Putnam, Conn.		Ed g
Smith, Douglas A., Lakeworth, Florida		61	Tetzlaff, James F., Wyncote, Pa.		63
Smith, Laurence C., Jr., Canaan, Conn.		Ps g	Thayer, Juliana M., Lancaster		60

Name	Home Address	Classification	Name	Home Address	Classification
Thompson, Leonard S., Jamaica, B.W.I.		61	Weinstein, Barry E.,		
Thompson, William I., III, Millbury		63	Hartford, Conn.		62
†Tobin, David J., Auburn		Ed g	Weinstein, Linda A., Brooklyn, N. Y.		61
Toczko, Alfreda A., Worcester		63	Weise, Mark J., Flushing, N. Y.		63
Tomasian, Thomas, Jr., Worcester		62	Welch, Teresa, Clinton		63
Topkin, William E., Mystic, Conn.		60	Wells, Mary E., Waterbury, Conn.		62
Tozeski, Stanley P., Shrewsbury		60	†Wells, Ruth E., West Sterling		s
*Traynor, Margaret E.,			Wellwood, David P., Auburn		62
Centerbrook, Conn.		62	Wendel, Ena B., Ware		63
Tremblay, William A., Southbridge		62	*Werbner, Arthur, Brighton		60
Trickett, Carolyn J., Leominster		63	Werner, Stephan L., Jamaica, N. Y.		60
Trottier, Gerard M., Jr., Millbury		63	*West, Mrs. Eleanor E., Fitchburg		61
Tryon, Ann C., Pownal, Maine		61	†West, Robert H., Shaker Heights, Ohio		62
Tucker, Barbara A., Worcester		Ed g	Wester, Ronald C., Gardner		62
Tucker, Judith A., Charlton		61	Westwood, David, Sterling Jct.		61
Tuthill, Martha L., Middlebury, Vt.		60	Wheaton, Donald J., Woburn		Ec S
			Whitney, Clifton E., Worcester		62
			Whitworth, Herbert E., Leicester		62
			Wholey, Rebecca L., Shelburne, Falls		63
*Uesaka, Mrs. Barbara H.,			Wichman, Michael H., Manchester, Conn.		62
New York, N. Y.		62	Widoff, Mark P., Worcester		63
Ungerleider, Edward H.,			Wiesel, Mrs. Alice, Worcester		s
Detroit, Michigan		62	Wiesel, Rudolph G., Worcester		G g
*Unterberg, Lester I., Bronx, N. Y.		G S	†Wightman, James W.,		
Utsunomiya, Takeshi, Tokyo, Japan		Ch F	Carneys Point, N. J.		Ec F
			Wilkie, Joyce E., Worcester		63
Valimaki, Ronald E., Worcester		60	†Wilkins, Maurice G., Jr., Holden		Ec g
Van Roy, Edward, White Plains, N. Y.		60	Williams, Carol J., Auburn		62
Vigeant, Paul R., East Longmeadow		62	Willman, Robert H., Southbridge		61
Vincent, David E., Worcester		G S	*Wilson, Mrs. Altina Waller, Bridgewater		63
Vinton, George E., Worcester		62	Wilson, Heather, Lunenburg		62
Virostek, Carol M., Douglas		61	*Wilson, Louis M., Sherburne		61
Vitarelli, Robert F.,			Wilson, Stephen O., Westport, Conn.		G S
Waterbury, Conn.		62	Winnie, Mary S., Cooperstown, N. Y.		63
Vogel, Mrs. Susan K.,			Wirarat, Amporn, Bangkok, Thailand		60
Washington, D. C.		Ps g	*Wolfe, John E., Clinton		Ec g
Vuona, Peter H., Worcester		60	†Wolovich, Mrs. Nancy L., Worcester		Ed g
Vuthisathira, Suchitra,			Woodfin, William G.,		
Bangkok, Thailand		62	Knoxville, Tennessee		H S
			Woods, William, London, England		61
Wagner, Jeffrey T.,			Wright, Barbara J., Warwick, R. I.		62
Queens Village, N. Y.		62	*Wright, Barry N., Leominster		60
Wagner, Paul R., Fitchburg		60	Wright, Beverly J., Chelmsford		62
Wait, Albert H., Jr., Worcester		60			
Walker, Thomas P., Worcester		60	Xanthakos, Christine K., Southbridge		63
Walsh, John F., Worcester		Ps g			
Ward, Frances E., Freedom, Maine		61	Yang, Joon Hong, Seoul, Korea		Ec S
Ward, Richard W., St. Johnsbury, Vt.		H g	†Yang, Kun Joo, Zunnam, Korea		Ec S
Wareing, Richard J., Bellows Falls, Vt.		63	*Yenovkian, John, Shrewsbury		63
Wastila, William B., Leicester		60	†Young, Mary L., Worcester		63
Waters, Patricia R., Cranston, R. I.		61			
Watson, Charles F., Kent, Conn.		62	Zajac, Elsie-Marie, Ware		62
Watstein, George J., New Haven, Conn.		60	Zajac, Leo W., Worcester		61
Webster, James H.,			Zarzynski, Robert D.,		
Hallowell, Maine		Ec S	Columbus, Ohio		63
Weinreb, Elaine J., Worcester		63	Zisch, Anna I., Worcester		61

I (2). STUDENTS IN RESIDENCE LESS THAN ONE SEMESTER

Bartolomei, Daniel V., Jr., East Falmouth	B g	McCabe, James E., Northboro	s
Berry, Arnold E., Webster	Ed g	Norman, Robert, Millbury	s
Boyd, Ernest B., Worcester	61	Perreault, David G., Shrewsbury	61
Clarke, Paul M., Alexandria, Va.	62	Platt, Charles III, Southboro	H g
Gary, Richard A., Leicester	60	Porter, Gerald D., Worcester	61
Granger, David R., Leicester	62	Rogers, Thomas C., Worcester	61
Hodes, Stephen F., Worcester	62	Roman, Richard P., Bronx, N. Y.	Ec g
Hurd, Frank J., South Lancaster	s	Uy, Benjamin G., Quezon City, Philippines	Ec g
Lang, Herman B., Mobile, Alabama	H S	Walker, Norman E., Upton	s
Lucas, Mrs. Agnes P., Barre	Ed g	Walkowiak, Donald R., So. Lancaster	s
Lukshis, Aldona P., Worcester	Soc g	Wood, Mrs. Alice E., West Boylston	61
Mandell, Mrs. Naomi B., Worcester	Ed g		

II. SUMMER SCHOOL STUDENTS — 1959

Aaronson, Anthony E., Worcester	†Brady, John R., Mount Hope, West Va.
*Abruzzese, Mary Ann D. Worcester	*Breen, Rosemary, Shrewsbury
Ahn, Hansook, Seoul, Korea	Bridgham, Carleton G., Paxton
Amnott, James R., Danvers	Burdulis, Vincent J., Worcester
Applebaum, Eugene J., Worcester	Bureau, Paul E., Fitchburg
†Armistead, Arsititus-Milton, Bethel, N. C.	Burgess, Shirley G., Whitinsville
Arnold, Priscilla E., Worcester	Burke, Dominick F., Worcester
†Asnard, Robert R., Chowchilla, Calif.	Burnett, Barbara L., Worcester
*Bachant, Leo R., E. Millbury	
Backstrom, Mrs. Frances G., Worcester	Cahill, Randall W., Milford
*Baker, Elma L., Mrs., Sterling	Caldow, George D., Fitchburg
Baker, Patricia H., Hudson	Caldwell, Judith H., Princeton
Baljian, Vahe Vasken, Worcester	Cannon, Paula R., Worcester
†Barger, John E., Green Bay, Wisc.	*Canty, Jane Ann, Worcester
*Barnes, Mrs. Caroline B., Sutton	†Cargill, David M., Franklin
Barry, Thomas A., Worcester	†Carney, Harold F., Iselin, N. J.
Barton, George S., Worcester	Cavanaugh, Francis P., Worcester
*Bassett, Joyce Anne, Silver Spr., Md.	Chakonas, Paul C., Worcester
*Bates, Richard A., Shrewsbury	Chakour, Mitchell G., Worcester
Beach, Judith Ann, Shrewsbury	Champoux, Ralph W., Jr., Worcester
Bean, Stephen, Worcester	Chartier, Armand B., Worcester
Beaudet, Paul R., Gardner	Chauvin, Carol M., Worcester
Beller, Henry K., New York, N. Y.	Christofferson, Allen M., Jr., South Acton
Berg, John H., Worcester	Ciccone, Francis N., Worcester
Bernstein, Sylvia F., Worcester	Clem, Gordon H., Auburn
†Berthiaume, Edmond R., Auburn	Collier, Janet S., Concord, N. H.
Billiouris, Chrisilios T., Worcester	†Connell, Daniel W., New London, N. H.
Binette, Mrs. Cecile M., Webster	Connelly, John, Wakefield
Blakeslee, Elizabeth F., Shrewsbury	Connolly, Vincent F., Worcester
†Blomstrom, Lillian S., Worcester	*Connor, Kenneth F., Jr., Worcester
†Blotcher, Robert J., No. Miami, Fla.	Conrad, James L., Jr., Dudley
Bolster, Philip W., Whitinsville	Conroy, Mary B., North Brookfield
Borjeson, Robert Co., Worcester	†Copoulos, Nicholas J., Fitchburg
*Bosshard, Anne M., Worcester	Coughlin, Francis J., Marlboro
*Bostic, Mrs. Corrine E., Worcester	†Coulter, William J., Jr., Shrewsbury
Boyer, Lester E., Leicester	Courtney, Richard J., Leicester
Boyer, Stuart V., Worcester	Cove, James F., III, Uxbridge
†Bradfield, Allen L., Vincennes, Ind.	†Creamer, Frances C., Holden
Bradfield, Mrs. E. Pauline, Vincennes, Ind.	Creedon, Carolann J., Worcester

- *Cremer, Herbert S., Stow
- *Crotty, Mary G., Worcester
- Currier, Gable L., Leicester
- Daby, Walter N., Worcester
- Dander, Emanuel, Gales Ferry, Conn.
- †Darling, Robert W., Groton
- Davis, James E., Marlboro
- Davoren, Mary-Joan B., Milford
- †Denny, Duncan, Worcester
- Devoe, Anthony M., Metuchen, N. J.
- DiLiddo, Robert F., Worcester
- Doiron, Roger J., Chisholm, Maine
- *Dolphin, Thomas J., Worcester
- *Donahue, Thomas J., Jr., Worcester
- Doon, John A., Jr., Worcester
- Douglas, William C., Fitchburg
- †Doucette, Bernice R., Milwaukee, Wis.
- Doyle, Mrs. Marie O'R., Worcester
- Drawbridge, Penelope, Holden
- *Dresdale, Harold J., Spr. Valley, N. Y.
- †Duncan, Robert T., Gardner
- †Edmonson, Philip W., Dearborn, Mich.
- Emerson, Alice V. Mrs., Leicester
- Englund, Robert A., Shrewsbury
- Epstein, Gerald S., Worcester
- Ericson, Carol K., Worcester
- †Eteson, Donald C., Worcester
- Falk, J. David, Leominster
- Finan, Barbara A., Barre
- Fine, Arnold M., Worcester
- †Finley, John L., Hampshire, Ill.
- *Finney, Thomas W., Worcester
- *Fisher, Elaine M., East Douglas
- *Fisher, Phyllis M., Worcester
- †Fitzgerald, Donald E., Anaheim, Calif.
- Flannery, James W., Brookfield
- Flower, David A., Worcester
- Fluet, Frances G., Leominster
- *Fogelson, Allan P., Storrs, Conn.
- Foley, William P., Worcester
- Foster, Ernest W., Worcester
- Franciose, Anne M., South Barre
- Francis, George A., Worcester
- *Freedman, Lawrence E., Worcester
- Freedman, Stuart R., Worcester
- Frost, Kent S., Worcester
- †Gangler, Joseph M., North Haven, Conn.
- Gardner, Francis X., Worcester
- Gardner, Leland L., Clinton
- Garipey, Richard R., Barre
- Garipey, Mrs. Shirley S., Barre
- Garratt, Elizabeth A., Auburn
- Garrity, Ann C., Worcester
- Gemme, Raymond G., Millbury
- Germain, Norman W., Worcester
- Geronimo, Jean M., Worcester
- Gilbert, Mrs. Mildred K., Worcester
- Godard, Joseph E., Clinton
- *Goldstein, Stephan A., Bellerose, N. Y.
- †Gottlieb, Mrs. Selma B., Worcester
- Grandone, Roy F., Barre
- Gray, Charles G., Swansea
- Greene, Nancy M., Worcester
- Greene, Richard E., Worcester
- *Griffith, Linda P., Worcester
- Grillo, Louis P., Worcester
- Grimes, Joseph F., Shrewsbury
- Gromelski, Bradford A., Barre Plains
- Gustavson, Edwin A., Worcester
- Hagopian, Suzanne M., Worcester
- Hainsworth, Fenwick R., Northbridge
- †Hale, Forrest P., Pompano Beach, Fla.
- Hall, Donald L., Worcester
- *Halloran, Alfred J., Worcester
- †Hand, Charles R., Ayer
- †Harrington, Leo F., Bridgewater
- Hatch, Alan T., Auburndale
- Hawkes, Phyllis V., Mrs., Worcester
- †Hawkins, Asker B., Sr., Salisbury, N. C.
- †Hayden, Warren W., Worcester
- Hayes, John C., Millbury
- Hayman, Mrs. Dorothy E., Worcester
- *Hazelton, Janet H., E. Douglas
- Hebert, Joseph W., Leominster
- Hedlund, Robert P., Worcester
- †Herschfeld, Aaron, Brooklyn, N. Y.
- †Hession, Michael A., Uxbridge
- Hird, Lynda A., Rye, N. H.
- †Hirst, Howard L., Sterling
- Hogan, Eugene F., Oxford
- *Holmes, Robert C., Worcester
- *Hopley, Jean F., Fitchburg
- Houmere, Peter K., Worcester
- *Huhn, William A., Jr., Worcester
- *Ingalls, Curtis J., Leominster
- Jackson, Jane L., Mrs., Worcester
- *Jackson, Robert B., Cape Elizabeth, Me.
- Jacobs, Joel, Worcester
- Jacobsen, Mary B., Shrewsbury
- Jacobson, Zelda G., Worcester
- Jaffee, David A., Worcester
- †Jarman, Richard E., New Brunswick, N. J.
- Jay, Helen, Northboro
- Johnson, Carle A., Jr., Laconia, N. H.
- *Johnson, Clarke D., Marblehead
- Johnson, Judith A., Worcester
- Johnson, Mrs. Lois R., Worcester
- Johnson, Shirley A., Holden
- †Jones, Constance J., San Antonio, Texas
- Joseph, Richard S., Worcester
- Judge, Janet D., Worcester
- †Judge, Joseph F., Park Ridge, Ill.

- Kabadian, Edward, Jr., Worcester
 *Kallio, Rhoda J., Shrewsbury
 Kallio, Mrs. Signe-Maria, Worcester
 Kappel, Gertrude, Pine Plains, N. Y.
 Katz, Herman N., Lakewood, N. J.
 Katzeff, Brenda L., Worcester
 *Kazarian, Michael, Worcester
 Kazeroid, Francis J., Portland, Conn.
 Keane, John F., Worcester
 †Kelley, Archibald, Stoughton
 Kelly, William F., Worcester
 Kent, Mrs. Lillian W., Leominster
 *Kesslen, James M., Haverhill
 †Keyes, Glenn A., Great Neck, N. Y.
 *Kilborn, Malcolm D., Worcester
 *Kimball, Margaret J., Southbridge
 Kingsbury, Mrs. Virginia H., Worcester
 Koliss, John H., Whitinsville
 Korn, Philip, New York, N. Y.
 Kowalski, Carolyn M., Worcester
 Kroll, Arthur M., Whitinsville
 †Krutzky, Martin L., Worcester
 †Lachat, Raymond P., Winsted, Conn.
 *LaFage, Louis F., Watertown, Conn.
 Larson, John J., Worcester
 Lehw, John G., Jr., Freeport, Pa.
 *Lehman, Lillian I., Ellenville, N. Y.
 Leith, Barbara K., Worcester
 †Leone, Chester W., Meredith, N. H.
 †Lewis, Peter B., Southbridge
 Lieberman, Judith L., Adelphi, Md.
 Lightfoot, William I., Watch Hill, R. I.
 Linsert, Henry, John City, Tenn.
 †Lippert, H. Philip, Wahpeton, No. Dakota
 †Lisk, James B., Pasco, Wash.
 *Lisser, Richmond W.,
 Westmount, Montreal, Canada
 Locke, Sandra, Worcester
 Loewenberg, Robert J., Worcester
 †Lorber, Herman, Brooklyn, N. Y.
 Lord, J. Charles D., Leominster
 Lundquist, Donald F., Worcester
 *Lynch, Thomas F., Naugatuck, Conn.
 Lyon, Anthony E., Franklin
 Lyons, Sister Marion, Wellesley Hills
 MacDonald, John H., Westboro
 Mack, Norman B., Lynbrook, L. I. New York
 Macklow, Irwin B., Milford
 Makepeace, Sally J., Shrewsbury
 Mason, Roberta E., Fisherville
 Mattimore, Norine M., Worcester
 Mattson, Marcia A., Worcester
 Maxwell, Mary N., Worcester
 Maywalt, Virginia A., Worcester
 McCarthy, Jean C., Shrewsbury
 McCarthy, Philip C., Paxton
 McDonough, Anne L., Worcester
 McDonough, Gertrude T., Worcester
 McGrail, Richard D., Charlton City
 McGuire, Patricia A., Worcester
 McKenzie, Robert K., Worcester
 *McNeil, Gerard F., Whitman
 Meagher, John H., Worcester
 Melvin, Paul A., Worcester
 Miles, Kay V., No. Bennington, Vt.
 Mintz, Mrs. Alisa, Worcester
 Mochau, Barbara J., Worcester
 Moniz, James, Worcester
 Montgomery, Robert E., Norwich, Conn.
 Moulton, Mrs. Jane O., Holden
 Mourginis, Constantine L., Holden
 Moynihan, John J., Worcester
 *Navickas, Margaret A., Worcester
 *Newmark, Barry R., Milford
 †Nielsen, William A., Bakersfield, Calif.
 Nodine, Ralph H., Templeton
 *Norman, Robert C., Millbury
 Noyes, Sandra C., Worcester
 Oakes, Mrs. Nancy H., Holden
 O'Halloran, Thomas J., Worcester
 *Oliver, Richard E., Worcester
 O'Malley, Alice T., Clinton
 Orrell, David L., Whitinsville
 Overstreet, Gerald E., Ringwood, Okla.
 †Page, Charles W., Worcester
 †Paine, Carroll, C., Whitinsville
 Papelian, Mary, Milford
 Paquette, Romain, Montreal, Canada
 Parker, Dorothy M., Westboro
 Parnell, Francis W., Jr., Millville
 Pasceri, Gregory J., Worcester
 Payne, Stephen R., Leicester
 *Pemstein, Bernard D., Worcester
 Philips, Deborah C., Worcester
 Pinate, Mrs. Elena Ch.de,
 Panama, Rep. of Panama
 *Plich, Anna S., Mrs., Worcester
 Poor, Sally L., Shrewsbury
 Potvin, Robert J., Worcester
 *Powers, Geoffrey A., III, Worcester
 Price, Malcolm I., Clinton
 Prifty, Helen B., Worcester
 Prokos, Alexander S., Southbridge
 *Prouty, Joel W., Auburn
 *Pulaski, Joan R., Worcester
 Punyaratabhan, Sihajati, Bangkok, Thailand
 Raffman, Mrs. Rita, Worcester
 †Ranhoff, Per-Jan, Pomfret, Conn.
 Rappel, Richard W., Worcester
 †Reneson, Matthew, Menomonie, Wis.

Rettig, Estelle A., Holden
 *Rhodes, Helen W., West Upton
 Rice, Jerald A., Millbury
 Rizvi, Syed Asad Ali Khan, Hyderabad, India
 Romo, Charles D., Peabody
 Ross, Barbara L., Miami, Fla.
 Rossley, Paul R., Leicester
 *Rotman, Steven, Worcester
 †Rowell, Mrs. Barbara M., Holden
 Roy, Alan F., Worcester
 Royston, Patricia M., Auburn
 *Rugh, Patricia J., Manlius, N. Y.
 Ryan, Jane H., Webster
 Ryan, Joseph G., Methuen

Sack, Linda H., Worcester
 St. Pierre, Paul L., Shrewsbury
 Salamy, Norman G., Worcester
 Salmonson, Roger S., Worcester
 Salvin, Jacob G., Worcester
 *Samuel, Howard H., Worcester
 *Santoian, Barbara A., Worcester
 Sarajoti, Amphorn, Bangkok, Thailand
 Savulis, Anthony U., Auburn
 Schlosser, Francis L., Worcester
 Schofield, Edmund A., Jr., Worcester
 Schrader, Hugh D., Catskill, N. Y.
 *Schulman, Sanford E., Worcester
 *Schunmann, William C., Jr. Millbury
 Seguin, Jacqueline M., Southbridge
 †Shapiro, Jack, Newton
 Sharon, Aline F., Worcester
 Sharos, William L., Fitchburg
 Shaw, Douglas B., Westboro
 Sheftel, Lawrence E., Worcester
 Shields, Rosemary, No. Westport
 Shulman, Leon, Worcester
 Sickler, Harry A., Williamstown, N. J.
 Silverman, Lois, Worcester
 *Simes, Anne R., Shrewsbury
 †Simonian, Harry, Whitinsville
 Sims, James L., Worcester
 Sipos, William A., Auburn
 Smith, Carol G., Auburn
 Solomon, Mrs. Gertrude F., Worcester
 Sommer, Sigfried, Worcester
 Southwick, Ralph E., Leicester
 Southworth, William A., Amenia, N. Y.
 Spaulding, Mrs. Sondra H., W. Boylston
 Stetson, Penelope, La Plume, Pa.
 Stewart, Reed F., Princeton
 †Strand, Vivian G., Manly, Iowa
 Stuart, Nancy R., West Seneca, N. Y.
 Sudol, Lorraine, E. Rutherford, N. J.
 *Sullivan, Anthony R., Andover

Sullivan, Joyce P., Auburn
 Sullivan, Thomas J., Leominster
 Sullivan, William F., North Grafton
 Suzuki, Tetsuo, Fujioka-Machi,
 Tochigi-Ken, Japan
 Tangney, Marie F., Worcester
 Tanikella, Murti, Shrewsbury
 Thalín, David C., Worcester
 †Thur, Evelyn H., Lone Wolf, Okla.
 Tobin, David J., Worcester
 Tolson, Jennie M., Worcester
 *Topkin, William E., Mystic, Conn.
 †Trujillo, Anthony P., Whitesboro, N. Y.
 Tucker, Barbara A., Worcester

Uesaka, Yasuo S., Tokyo, Japan
 †Underwood, Walter A., Tuscaloosa, Ala.
 Upham, Eleanor J., Mrs., Barre
 Uy, Benjamin G., Quezon City, Philippines
 *Valimaki, Ronald E., Worcester
 Vokes, Mrs. Ora M., Sutton
 *Vuona, Peter H., Worcester

Walker, Roberta R., Mrs., Westboro
 †Walters, Margaret G., Baltimore, Md.
 *Wastila, William B., Leicester
 Waters, Mildred M., Tulsa, Okla.
 Watson, Charles F., Kent, Conn.
 †Waugh, Herbert W., Westboro
 Weiner, Mrs. Sandra A., Grafton
 Weinhold, Mary E., Worcester
 Welch, Teresa, Clinton
 Wells, Frank B., Barre
 Wells, Mrs. Missouri T., Birmingham, Ala.
 Whiterell, D. Ralph, Worcester
 *Wicke, Mary A., Worcester
 Wickwire, Barbara E., Worcester
 Wilkie, Joyce E., Worcester
 †Wilson, Robert P., Andover, N. H.
 *Windle, Thomas M., Sutton
 Wolfe, John E., Clinton
 Wright, Barry N., Leominster
 Wynne, Richard L., Worcester

*Xanthakos, Christine K., Southbridge
 *Yang, Joon Hong, Seoul, Korea
 *Youman, Tobey E., Medway
 Young, Daniel M., Woonsocket, R. I.

Zajac, Leo W., Hopedale
 Zarling, Harriet E., Worcester
 †Zipp, Margaret, Baltimore, Md.

SUMMARY OF ENROLLMENT FOR 1959-60

Undergraduates

	Men	Women		
Freshmen	133	79		
Sophomores	127	70		
Juniors	118	73		
Seniors	111	44		
			Men	Women
Total Undergraduates			489	266
Graduate Students			165	53
Special Students			33	17
(Evening College (enrolled in day college))			3	3
				Total
TOTALS — Men's College, Women's College and Graduate School			690	339
1959 Summer School			256	142
Total students			946	481
Less Duplications			88	43
Net totals			858	438
Evening College*				
Fall term 1959			452	240
Spring term 1960			394	199

* Does not include those enrolled for non-credit courses.

Degrees Conferred

In the Calendar Year 1960

BACHELOR OF ARTS

- *Anthony Eli Aaronson
- William Edmund Ahearn
- Hansook Ahn
- *James Roy Amnott
- Neil Richard Andersen, Cum Laude
and with High Honors in Chemistry
- Richard Daniel Barry
- Richard Allen Bates
- Peter Bedrosian
- Henry Kalman Beller
- Peter Leonard Berger
- Howard Standish Bergman
- Theodore Ara Bohigian, Jr., Magna Cum
Laude and with High Honors in Chemistry
- Anne Morant Bosshard, Cum Laude
- George Jefferson Breen
- Lynda Beth Brotherton
- Richard Leon Brunelle
- Charles Ross Bryant
- Dominick Francis Burke
- Jane Ann Canty
- Richard Thomas Carlin
- Eileen Kathryn Carroll
- Mitchell Gabriel Chakour, Jr.
- Maxine Harriet Check, Magna Cum Laude
- Mildred Warner Church
- John Peter Cocchiarella
- Leah Ann Cohen
- John Francis Cronan, Jr.
- Beverly Davis
- Sharon Lou Degen, Magna Cum Laude
and with High Honors in Psychology
- Michael Peter Diamantopoulos
- Michael Barry Dickman
- John Ames Donaghue
- Ernest Donald Dufresne, Magna Cum Laude
and with Honors in History
- Edward Francis Durkin
- Elwood Kossuth Ede
- Mildren Helen Eidt
- Jane May Evers
- Jacques Fein
- Arnold Martin Fine, with Honors in History
- James William Flannery
- Sandra Louise Foster
- Paul Stephen Gans
- Marion Frances Giannette
- Mary Elizabeth Gillingham
- John Michael Gogol
- Alan David Goldstein
- Nancy Lois Granger
- Harvey Greenberg
- David Paul Grey
- Linda Grube
- *Frederick Rainsford Hart, III
- Phyllis Victoria Hawkes
- Nancy Eve Henry, with Honors in Chemistry
- Judith Shapiro Herschman
- Burton Horne
- *William Anthony Huhn
- Martha Jean Ingraham
- Judith Ann Jenkins
- *Clarke Dana Johnson
- Roger Johnson
- Rhoda Jahn Kallio
- Edward Ronald Kaminski
- *John Haig Karagosian
- Cynthia Kasparian
- Herman Nathan Katz
- *Michael Kazarian
- James Mitchell Kesslen
- Arthur Sotir Koki
with Honors in English
- Jean Carol Krauss
- Kent Butler Lamoureux
- *John Joseph Larson
- Louise Ruth Leonard
- Sandra Locke
- Stuart Alden MacKown
with Honors in Government
- Cynthia Grace MacRitchie
- Mary Elizabeth Mahoney
- Herman Leonard Mank, Jr.
- Ulv Masing
- Jay Earle McCune
- *Loretta Marie Morelle
- Charles Herbert Nelson, Cum Laude
and with High Honors in Chemistry
- Nancy Holmstrom Oakes
- Gerald Paul O'Connor
- Frederick Jay Oertly
- Frances Mary Pepin
- *Malcolm Ivan Price
- Harvey Roland Redford
- Mann Que Rho, Magna Cum Laude
- James Frank Ronberg
- Barbara Louise Ross
- Edward Raymond Ruddy

*As of June 7, 1959.

Patricia Joan Rugh
 Joseph Gerald Ryan
 Leonard Guzikowski Salvin
 Barbara Ann Santoian
 Bradford Howard Sargent
 Richard Duncan Sears
 with Honors in Government
 Ronald Cecil Semone, Cum Laude
 and with Honors in Government
 Rosemary Shields
 Lois Freedberg Silver
 Stanley Silverzweig
 Carol Gladys Smith
 Sigfried Sommer
 Harvey Benjamin Spector
 Gwendolyn Rowena Sprott

Erik Einar Stenmark, Cum Laude
 and with High Honors in Sociology
 Richard Ernest Summers
 John Alf Svenson
 William Elliot Topkin, Summa Cum Laude
 Stanley Paul Tozeski, Cum Laude
 Martha Lee Tuthill
 Paul Roy Wagner, Cum Laude
 and with Honors in English
 Albert Huntoon Wait, Jr.
 Thomas Payson Walker
 William Bruce Wastila
 George Joseph Watstein, Magna Cum Laude
 and with High Honors in Chemistry
 Arthur Werbner
 Stephan Lionel Werner

BACHELOR OF BUSINESS ADMINISTRATION

Frank Joseph Allard, IV
 David Stuart Benjamin
 Robert Clifford Borjeson
 Stephen Emanuel Brodsky
 *Paul Emile Bureau
 *Ralph William Champoux, Jr.
 Curtis Landon Chapman
 Anthony Joseph Chester
 *Roger Joseph Doiron
 Donald Herbert Dolphin
 with Honors in Economics
 Robert Arnold Englund
 Joel David Falk
 John Francis Flynn
 Kent Schuster Frost
 Francis Xavier Gardner
 Louis Peter Grillo
 Donald Edward Groves

James Michael Hallinan
 John Frances Kokernak
 *John Henry Koliss
 William Donald LaFosse
 Anthony Edward Lyon
 *Robert Eldredge Montgomery
 Gary Robert Murray
 Ernest John Pantos
 Bradford Lewis Richmond
 Paul Robert Rossley
 Steven Rotman
 *Norman Schoenfeld
 *Hugh Douglas Schrader
 Edward Van Roy
 with Honors in Business Administration
 Peter Henry Vuona
 Amporn Wirarat
 Barry Norton Wright

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

(Evening College)

Walter John Cotting
 William Austin Curtis, Jr.
 Ralph Philip Dorey, Cum Laude
 Alfred John Halloran
 Clayton Fairfield Jones, Magna Cum Laude
 Martin Peter Neslusan
 Walter Paul Plucinski

Louis Prunier
 William Louis Sharos
 Arvin Arthur Spaulding
 William Francis Sullivan
 Joseph Edward Tancrell, III
 David Ralph Whiterell

*As of June 7, 1959.

BACHELOR OF SCIENCE IN GENERAL STUDIES
(Evening College)

Walter Norman Daby	Patricia Mae Royston
Rita Dorothea Driscoll	Anthony Vincent Savulis
Elizabeth Adelaide Garrett	Aldona Venclauskas
Steven Thomas Kerxhalli	Robert William Wehrli
Gertrude Theresa McDonough, Cum Laude	

MASTER OF ARTS

John Melville Billman	Roland Chester Lowe, Jr.
David Dallin Brodeur	Richard Daniel McGrath
Robert Kenneth Butler	Albert Roy Mitchell
Sumner Burton Cotzin	Victor Emil Noshkin, Jr.
Frederick William Csizmesia	Ernesto Pinate
Dave Dichter	Annette Marie Pinckney
Aleta Louise Grillot	Patricia Rose Power
Marilyn Ann Hayden	Fiske Edwin Rawden
Robert Preston Hess	Judith Gladding Reilly
Peter William House	Paul Solomon Rosenkrantz
Rudolph Raymond Hunter	George Edward Stannard
Eloise Nolde Johnson	William Steven Stapakis
Stanley David Klein	Edward Luke Tully
George Herbert Kronberg	William Reynier Tyson
Phelps Tibor Laszlo	Takeshi Utsunomiya
Robert Bryce Looker	Joon Hong Yang

MASTER OF ARTS IN EDUCATION

Frances Gertrude Backstrom	Sally Marie Lingner
Charlotte Lane Ball	Ronal Cyril Madnick
John Allan Chupka	Patricia Ann McGuire
Duncan Denny	John Ronald Pitt
Francis Joseph Foley, Jr.	Anna Shapiro Plich
Ann Christine Garrity	Jerald Arthur Rice
Kenneth Paul Gauthier	Jane Heaton Ryan
Norman William Germain	Doris Diane Salzer
Barbara Kendall Leith	

DOCTOR OF PHILOSOPHY

Francis Frederick Carini	John Earl Rickert
Margaret Sarah Chew	Richard D. Sands
John Donald Coupe	I Made Sandy
John Tait Davis	Harry George Schalck
Edmond Leon Escolas	Paul Solomon
Benjamin Joseph Intorre	Sybil Dorothy Speier
Lane Joseph Johnson	William Francis Thompson, Jr.
Joseph Henry McFarland	Milan Radoje Uskokovic
Herbert Joseph Nickel	Paul Weiner
Arnold Herbert Raphaelson	

HONORARY DEGREES

Wallace Kirkman Harrison
 Shannon McCune
 Richard Stetson Morse
 Herman Wouk

Doctor of Letters
 Doctor of Laws
 Doctor of Science
 Doctor of Letters

SUMMARY FOR 1960

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CLARK UNIVERSITY

Seventieth Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 5, 1960



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Suite Breve

Langlais

Processional

Invocation

THE REVEREND THADDEUS CLAPP
Rector, St. Mark's Episcopal Church
Worcester, Massachusetts

Welcome by the President

DR. HOWARD BONAR JEFFERSON

Commencement Address

HERMAN WOUK
Playwright, Novelist, Author

Conferring of Degrees

Alma Mater: Fiat Lux (Stanzas I and III)

The Benediction

THE REVEREND THADDEUS CLAPP

Recessional

Organist: Henry Hokans

Candidates for the Degree of Bachelor of Science in Business Administration

Walter John Cotting	Louis Prunier
William Austin Curtis, Jr.	William Louis Sharos
Alfred John Halloran	Arvin Arthur Spaulding
Martin Peter Neslusan	William Francis Sullivan
Walter Paul Plucinski	Joseph Edward Tancrell, III
David Ralph Whiterell	

Candidates for the Degree of Bachelor of Science in Business Administration with Honors

Cum Laude
Ralph Philip Dorey
Magna Cum Laude
Clayton Fairfield Jones

Candidates for the Degree of Bachelor of Science in General Studies

Walter Norman Daby	Patricia Mae Royston
Rita Dorothea Driscoll	Anthony Vincent Savulis
Elizabeth Adelaide Garratt	Aldona Venclauskas
Steven Thomas Kerxhalli	Robert William Wehrli

Candidate for the Degree of Bachelor of Science in General Studies with Honors

Cum Laude
Gertrude Theresa McDonough

Candidates for the Degree of Bachelor of Business Administration

Frank Joseph Allard, IV	James Michael Hallinan
David Stuart Benjamin	John Francis Kokernak
Robert Clifford Borjeson	*John Henry Koliss
Stephen Emanuel Brodsky	*William Donald LaFosse
*Paul Emile Bureau	Anthony Edward Lyon
*Ralph William Champoux, Jr.	*Robert Eldredge Montgomery
*Curtis Landon Chapman	Gary Robert Murray
Anthony Joseph Chester	Ernest John Pantos
*Roger Joseph Doiron	Bradford Lewis Richmond
Robert Arnold Englund	Paul Robert Rossley
Joel David Falk	Steven Rotman
John Francis Flynn	*Norman Schoenfeld
Kent Schuster Frost	*Hugh Douglas Schrader
Francis Xavier Gardner	Peter Henry Vuona
Louis Peter Grillo	Amporn Wirarat
Donald Edward Groves	Barry Norton Wright

Candidates for the Degree of Bachelor of Business Administration with Honors

Departmental Honors
Donald Herbert Dolphin, *Economics*
Edward Van Roy, *Business Administration*

* As of June 7, 1959

Candidates for the Degree of Bachelor of Arts

- | | |
|--------------------------------|---------------------------|
| *Anthony Eli Aaronson | *Clarke Dana Johnson |
| ✓William Edmund Ahearn | Roger Johnson |
| ✓Hansook Ahn | ✓Rhoda Jahn Kallio |
| *James Roy Amnott | Edward Ronald Kaminski |
| ✓Richard Daniel Barry | *John Haig Karagosian |
| ✓Richard Allen Bates | Cynthia Kasparian |
| ✓Peter Bedrosian | ✓Herman Nathan Katz |
| ✓Henry Kalman Beller | *Michael Kazarian |
| Peter Leonard Berger | James Mitchell Kesslen |
| Howard Standish Bergman | Jean Carol Krauss |
| George Jefferson Breen | ✓Kent Butler Lamoureux |
| ✓Lynda Beth Brotherton | *John Joseph Larson |
| ✓Richard Leon Brunelle | Louise Ruth Leonard |
| Charles Ross Bryant | Sandra Locke |
| ✓Dominick Francis Burke | Cynthia Grace MacRitchie |
| ✓Jane Ann Canty | ✓Mary Elizabeth Mahoney |
| Richard Thomas Carlin | Herman Leonard Mank, Jr. |
| Eileen Kathryn Carroll | Ulv Masing |
| Mitchell Gabriel Chakour, Jr. | Jay Earle McCune |
| ✓Mildred Warner Church | *Loretta Marie Morelle |
| ✓John Peter Cocchiarella | Nancy Holmstrom Oakes |
| Leah Ann Cohen | Gerald Paul O'Connor |
| John Francis Cronan, Jr. | Frederick Jay Oertly |
| ✓Beverly Davis | Frances Mary Pepin |
| ✓Michael Peter Diamantopoulos | *Malcolm Ivan Price |
| ✓Michael Barry Dickman | Harvey Roland Redford |
| John Ames Donaghue | James Frank Ronberg |
| Edward Francis Durkin | Barbara Louise Ross |
| Elwood Kossuth Ede | Edward Raymond Ruddy |
| Mildred Helen Eidt | Patricia Joan Rugh |
| Jane May Evers | Joseph Gerald Ryan |
| Jacques Fein | Leonard Guzikowski Salvin |
| James William Flannery | ✓Barbara Ann Santoian |
| Sandra Louise Foster | Bradford Howard Sargent |
| ✓Paul Stephen Gans | Rosemary Shields |
| ✓Marion Frances Giannette | Lois Freedberg Silver |
| Mary Elizabeth Gillingham | Stanley Silverzweig |
| ✓John Michael Gogol | Carol Gladys Smith |
| ✓Alan David Goldstein | Sigfried Sommer |
| Nancy Lois Granger | ✓Harvey Benjamin Spector |
| ✓Harvey Greenberg | Gwendolyn Rowena Sprott |
| David Paul Grey | Richard Ernest Summers |
| Linda Grube | John Alf Svenson |
| *Frederick Rainsford Hart, III | Martha Lee Tuthill |
| Phyllis Victoria Hawkes | Albert Huntton Wait, Jr. |
| Judith Shapiro Herschman | Thomas Payson Walker |
| Burton Horne | William Bruce Wastila |
| *William Anthony Huhn | ✓Arthur Werbner |
| Martha Jean Ingraham | ✓Stephan Lionel Werner |
| Judith Ann Jenkins | |

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

- ✓ Arnold Martin Fine, *History*
- ✓ Nancy Eve Henry, *Chemistry*
- ✓ Arthur Sotir Koki, *English*
- Stuart Alden MacKown, *Government*
- Richard Duncan Sears, *Government*

Cum Laude

- Neil Richard Andersen, *and with High Honors in Chemistry*
- Anne Morant Bosshard - *Wash. Univ. Med. Sch.*
- Charles Herbert Nelson, *and with High Honors in Chemistry*
- Ronald Cecil Semone, *and with Honors in Government*
- Erik Einar Stenmark, *and with High Honors in Sociology*
- Stanley Paul Tozeski
- ✓ Paul Roy Wagner, *and with Honors in English -*

Magna Cum Laude

- Theodore Ara Bohigian, Jr., *and with High Honors in Chemistry*
- Maxine Harriet Check
- ✓ Sharon Lee Degen, *and with High Honors in Psychology*
- Ernest Donald Dufresne, *and with Honors in History - Yale U. Law Sch.*
- ✓ Mann Que Rho
- ✓ George Joseph Watstein, *and with High Honors in Chemistry*

Summa Cum Laude

- ✓ William Elliot Topkin - *Yale Univ. Grad. Sch.*

Candidates for the Degree of Master of Arts in Education

- | | |
|----------------------------|------------------------|
| Frances Gertrude Backstrom | ✓ Sally Marie Lingner |
| Charlotte Lane Ball | ✓ Ronal Cyril Madnick |
| John Allan Chupka | ✓ Patricia Ann McGuire |
| Duncan Denny | ✓ John Ronald Pitt |
| Francis Joseph Foley, Jr. | Anna Shapiro Plich |
| Ann Christine Garrity | Jerald Arthur Rice |
| ✓ Kenneth Paul Gauthier | Jane Heaton Ryan |
| Norman William Germain | Doris Diane Salzer |
| Barbara Kendall Leith | |

Candidates for the Degree of Master of Arts

Biology

Phelps Tibor Laszlo

Chemistry

George Herbert Kronberg
Victor Emil Noshkin, Jr.
Takeshi Utsunomiya

Economics and Sociology

Peter William House
Rudolph Raymond Hunter
Richard Daniel McGrath
Ernesto Pinate
Annette Marie Pinckney
Patricia Rose Power
✓ William Steven Stapakis
✓ Joon Hong Yang

Geography

David Dallin Brodeur
Frederick William Csizmesia
Dave Dichter
✓ Aleta Louise Grillot
✓ Marilyn Ann Hayden
Eloise Nolde Johnson
Robert Bryce Looker
Albert Roy Mitchell
Fiske Edwin Rawden
William Reynier Tyson

History, Government, and International Relations

John Melville Billman
Robert Kenneth Butler
Robert Preston Hess
Edward Luke Tully

Mathematics

Sumner Burton Cotzin
George Edward Stannard

Physics

Judith Gladding Reilly

Psychology

Stanley David Klein
Roland Chester Lowe, Jr.
Paul Solomon Rosenkrantz

Candidates for the Degree of Doctor of Philosophy

Chemistry

Francis Frederick Carini
Benjamin Joseph Intorre
Milan Radoje Uskoković

Economics and Sociology

John Donald Coupe
Edmond Leon Escolás
Arnold Herbert Raphaelson
Paul Weiner

Geography

Margaret Sarah Chew
John Tait Davis
Lane Joseph Johnson
John Earl Rickert
Richard D. Sands
I Made Sandy
William Francis Thompson, Jr.

History, Government, and International Relations

Harry George Schalck

Psychology

✓ Joseph Henry McFarland
✓ Herbert Joseph Nickel
Paul Solomon
Sybil Dorothy Speier

Conferring of Honorary Degrees

WALLACE KIRKMAN HARRISON

Doctor of Letters

Presented by Samuel Pendleton Cowardin, III

SHANNON McCUNE

Doctor of Laws

Presented by Samuel Van Valkenburg

RICHARD STETSON MORSE

Doctor of Science

Presented by Percy Martin Roope

HERMAN WOUK

Doctor of Letters

Presented by Karl Oscar Emanuel Anderson

ORDER OF AHEPA PRIZE FOR EXCELLENCE IN GREEK

Paul David Eisenberg

THE PRENTISS CHENEY HOYT PRIZE IN POETRY

Dona Rose Luongo

THE HOMER P. LITTLE AWARD IN GEOLOGY

Ernestine Blodgett

THE SANFORD MEMORIAL SCHOLARSHIP

Paul David Eisenberg

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

CLARK UNIVERSITY

Seventy-First Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 11, 1961



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Bishop's Promenade

Coke-Jephthcott

Rhosymedre

Vaughan Williams

Toccata

Boellmann

Processional

Rigaudon

André Campra

Invocation

THE REVEREND DR. GORDON M. TORGENSEN
Minister, First Baptist Church
Worcester, Massachusetts

Welcome by the President

DR. HOWARD B. JEFFERSON

Commencement Address

DR. RALPH J. BUNCHE
United Nations Under-Secretary

Conferring of Degrees

Alma Mater: Fiat Lux (Stanzas I and III)

The Benediction

THE REVEREND DR. GORDON M. TORGENSEN

Recessional

Organist: Henry Hokans

Evening College Candidates for the Degree of Bachelor of Science in Business Administration

Paul Constantine Chakonas	Bernard Joseph Gevry
Richard John Courtney	Joseph Charles Edward Lord
Ralph Cleon Croteau	Philip Charles McCarthy
Rudolph Joseph Forge	Douglas Boyce Shaw
Wesley Walter Gaulin	Patrick Vincent Sheehan
	John Martin Stein

Evening College Candidates for the Degree of Bachelor of Science in General Studies

Peter Blanchard	*Edward Kabadian, Jr.
Raymond Peter Cox	Viola Elsie King
Marie O'Regan Doyle	Anne Louise McDonough
Kenneth Norman Hagberg	Thomas John O'Halloran
	Frank Benjamin Wells

Evening College Candidates for the Degree of Bachelor of Science in General Studies with Honors

Magna Cum Laude

Leland Lorain Gardner
Richard Lindi

Candidates for the Degree of Bachelor of Business Administration

Norman Earl Beedle	*Lee Holbrook Goodstone
*John Henry Begley	Richard James Hammond
*Nicholas Florou	Ray Wiley Nightingale

Candidates for the Degree of Bachelor of Science in Business Administration

Charles Samuel Altman	Norman Barry Mack
Stephen Bean	Jerome Lawrence Martin
Clyde Eastwood Collins	Richard Francis Parslow
Raymond Robbins Davison	Harry George Petridis
Donald Leslie Hall	Donald Russell Phaneuf
Helen Bertha Jarest	Richard John Stropp, III
John August Josephson, Jr.	Frank Swierad, Jr.
Ernest Keating Kenneway, Jr.	

Candidate for the Degree of Bachelor of Science in Business Administration with Honors

Departmental Honors

Lawrence Stuart Halpern

**As of June 5, 1960*

Candidates for the Degree of Bachelor of Arts

Helen Vivian Aareskjold	Allen Merrill Kirshenbaum
Margaret Woodburn Adams	Robert Martin Kramarz
Helena Antonieta Adler-Wouters	Frances Celine Lewandowski
Carol Iris Aharonian	William Ira Lightfoot
Alice Agnes Albert	Nancy Marie Lonnroth
Michael Spylios Assimakopoulos	Marilyn Betty Lundquist
Arthur Joseph Bastille	*Dona Rose Luongo
David Allen Beckwith	Lois Jane Marshak
Kenneth Joseph Billings	Ann Frances Martin
Peter Craig Blomstrom	Richard Mason
Joseph Francis Bradley	Duncan Elliot McLeod
George Dudley Caldwell	Frank Solomon Minasian
Arthur Richard Carlson	Alisa Berenstein Mintz
Mary Margaret Carstens	Jeffrey Munro Mitchell
Allen Martin Christofferson, Jr.	*Margaret Ann Navickas
Bernard Nathan Cohen	Richard Ellsworth Oliver
Elizabeth Ann Colebrook	Francis William Parnell, Jr.
Janet Sheldon Collier	*Gregory John Pasceri
Angelo DiDomenico	Joel Ward Prouty
‡Carl John DiGregorio	†Oures Paul Reschke
Joan Lillian Finster	Richard David Rigolo
Barbara Dee Fishlin	*Charles Donald Romo
Vilaichird Gadavani	Lois Rosalie Ross
Bela Gajary	Donna Marie Rousseau
John Michael Gannon	Alan Francis Roy
Eleanor Fierer Glickman	*Jacob Guzikowski Salvin
Daniel Bronius Glodas	Elizabeth Alfreida Hilda Sandholm
Ian Keith Graham	Louis Morris Sandman
Allen Paul Grenet	Johanna Meta Sayre
*Linda Pauline Griffith	*Anne Roberta Simes
Judith Eleanor Hagstrom	William Anson Southworth
*Alan Townsend Hatch	Alfred Souza, Jr.
Levis William Hayward, Jr.	*Philip Steiman
Eugene Francis Hogan	Steven Hillel Stein
Judith Hunter	Frederick Joseph Terrio
*Jane Leal Jackson	*Juliana McHenry Thayer
Leonard Steven Jacobs	*Ronald Ensio Valimaki
Robert Frederick Johnson	Frances Ellen Ward
Barbara Ann Kalinski	Judith Tucker Woodard
Katherine Stephen Karcasinas	Patricia Waters Youden
David Lee Keim	Ingeborg Stanislaw Anna Zisch

†As of June 8, 1958

‡As of June 7, 1959

*As of June 5, 1960

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

Cornelia Scott Bugbee, *Psychology*
Eleanora Roberta Clarke, *Chemistry*
Herbert Steven Cremer, *Economics*
Catherine Elizabeth Deedy, *Chemistry*
Martin Bruce Epstein, *Sociology*
Caroline Evans, *English*
Norman Joseph Harris, *Biology*
David Anthony Nichols, *Government*
Robert Allan Stein, *English*
Leo Walter Zajac, *Economics*

Cum Laude

Rosalie Almasian
Margaret Ellen Lawford, *and with Honors in Geography*
*Nancy Moscofian
Mary Jane Murray
Linda Ann O'Janne, *and with High Honors in Chemistry*
Austra Ozols
Michael Paul Paskevich
Perry Robert Pero, *and with High Honors in Economics*
JoAnn Geraldine Pucilauskas
Marcia Ann Savage
Charles Hermas Swope, *and with Honors in Physics*
Carol Mae Virostek
Linda Ann Weinstein

Magna Cum Laude

Edward William Gerner
William Woods

Summa Cum Laude

Paul David Eisenberg, *and with Highest Honors in Philosophy*
Ann Carolyn Tryon, *and with High Honors in Chemistry*

Candidates for the Degree of Master of Arts in Education

Arnold Emerson Berry	Janet Diane Judge
Robert Aram Bogigian	John Charles Katin
George Jefferson Breen	Agnes Page Lucas
Margaret Louise Burckes	Richard Lyon, Jr.
Elizabeth Joan Caine	Irwin Barry Macklow
Raymond Joseph Castriotta	Cynthia Grace MacRitchie
Carol Kristine Ericson	Herman Leonard Mank
Elaine Elizabeth Foster	John Francis McManus
Raymond George Gemme	Constantine Louis Mourginis
Selma Bernice Gottlieb	Ralph Harold Nodine
Curtis James Ingalls	Thomas Joseph Romano
	Barbara Ann Tucker

*As of June 5, 1960

Candidates for the Degree of Master of Arts

Biology

Shih-Chen Auyang
Thomas Augustine Barry
Richard John Blasco
Matthew Handlin Connors
Alice Teresa O'Malley
Hedwig Jadwiga Szyńska

Chemistry

Krishnaswamy Soundara Rajan

Economics and Sociology

Stephen Joel Canner
Woo Sik Kee
Hyon Bae Kim
James Charles Loughlin
Llewellyn Maximillian Mullings
Tetsuo Suzuki
Edward Van Roy
Kun Joo Yang

Geography

Paul Roland Beaudet
Harold Frederick Keuper
Jesse Louis Scott Pendleton, Jr.
Carolyn Ann Steidle
Lester Ivan Unterberg

History, Government, and International Relations

Louis Robert Bisceglia
Gerald Chasin
Sumitra Ramdas Gandhi
Chester Handleman
Edward Francis McCabe
Ralph Richard Moore
Richard Willis Pierson
David Richard Rosser

Mathematics

Lucy Kasparian Aharonian

Psychology

Bruce Denner
George Rand
Melvyn Schnall
Csaba Sziklai

Candidates for the Degree of Doctor of Philosophy

Chemistry

John Lemuel Bethune
Taku Matsuo
Paul Driscoll McMaster

Economics and Sociology

Harold M. Goldstein
Roy George Poulsen
Abdul Qadir

Geography

Roger James Evan Brown
Alfonso José Freile
Harry Bertram Kircher
Emanuel Maier
Hazel Latendress Stickney

History, Government, and International Relations

Richard Haskayne McKey, Jr.
George Henry Merriam

Psychology

Margery Bodansky
Inge Komers Broverman
Frank Edward Clarkson
Patricia Jo Nair
Louis Joseph Nidorf
Janet Switzer

Conferring of Honorary Degrees

RALPH JOHNSON BUNCHE

Doctor of Laws

Presented by Henry Donaldson Jordan

STANLEY JASSPON KUNITZ

Doctor of Letters

Presented by Karl Oscar Emanuel Anderson

JOHN EDWARD SAWYER

Doctor of Laws

Presented by Dwight Erwin Lee

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

Clark University
WORCESTER 10, MASSACHUSETTS

1960

***SUMMER
SCHOOL***

Intercession

June 6 to June 25

Summer Session

June 27 to August 12

**CLARK UNIVERSITY BULLETIN
WORCESTER 10, MASS.**

CALENDAR

JUNE

- 6 Monday, *Interession Registration* 9-12 noon
First class meeting 2 P.M.
- 22 Wednesday, Registration for evening classes
- 25 Saturday, Examinations for Interession courses 9-12 noon
- 27 Monday, *Summer Session Registration* for day classes 9-12 noon
Evening classes begin 6 P.M.

JULY

- 19 Tuesday, Examinations in double courses concluding after first three weeks
- 20 Wednesday, Beginning of double courses of second three weeks

AUGUST

- 9 Tuesday, No classes
- 10 Wednesday, Examinations for classes meeting at 8 A.M.—9 to 12 noon
for evening classes meeting at 6 P.M.—7 to 10 P.M.
- 11 Thursday, Examinations for classes meeting at 9:15 A.M.—9 to 12 noon
- 12 Friday, Examinations for classes meeting at 10:30 A.M.—9 to 12 noon
for classes meeting at 11:45 A.M.—2 to 5 P.M.
for evening classes meeting at 8 P.M.—7 to 10 P.M.

1960

JUNE						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

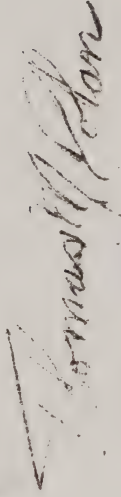
JULY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

a very busy time of year for you. We do hope nevertheless that you will be able to return the completed transcripts by July 5th.

Any supplementary information which you would care to give us about the candidates would be greatly appreciated.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Thomas M. Dolan". The signature is written in a cursive style with a large, stylized initial 'T'.

Thomas M. Dolan
Acting Director of Admissions

P/eb

Enc.

Widened cover

- Spec - 1963

Rob. L. Bagge

Quater by note - ?

Clark University SUMMER SCHOOL

Worcester, Massachusetts

Intersession, June 6 to June 25

Summer Session, June 27 to August 12

1960

The Clark University Bulletin is published in February, April, June, July, August, September, October, and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: The Summer School, Clark University, 950 Main Street, Worcester 10, Massachusetts.

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular.

Active participation by the students in class discussions is encouraged. In addition to regular courses, the whole Summer School is invited to attend the weekly punch party lecture-discussions, where a faculty member or a visitor discusses some topic of general interest.

There is a wide variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have summer jobs and wish to attend school at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library which employs the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection. The fine tennis courts will be available for use by Summer School students.

SPECIAL PROGRAMS

In this summer's offerings there are several special programs of interest. Under the direction of Dr. Charles T. Bumer a "Summer Institute for Mathematics Teachers in Secondary Schools and Junior Colleges" will again be offered under National Science Foundation sponsorship. The Institute begins June 27 and ends August 6, 1960 and will be conducted by the Department of Mathematics. The Institute, planned for a total of fifty-five participants, has the principal aim of strengthening the mathematics background and professional competence of selected teachers.

The National Science Foundation will also sponsor, in the field of chemistry, "A program of Research Participation for Teacher Training." This

eight-week program, under the supervision of Dr. Arthur E. Martell, will be open to eight junior college and high school chemistry teachers. Each student will become associated with one of the various chemistry research projects now being carried on in the department.

The United States Office of Education in the Department of Health, Education and Welfare will sponsor a "Counseling and Guidance Training Institute" under the direction of Dr. Vernon Jones of the Department of Education. This program is designed to provide advanced instruction in counseling and guidance for twenty-five secondary school educators. This Institute will run from June 27 to August 10, and will carry six semester hours of graduate credit in Education.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Science in Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff other than those listed in the Summer School Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, statistics and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 A.M. and at 2:00 P.M., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six

semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge, and application for it should be made in the Summer School office. There is a \$1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$85.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period.

Students who attend not more than three days of classes in either the Interession or Summer Session and are forced to withdraw with just cause, may receive a refund of their tuition on applying in writing to the Director of the Summer School. Students of the Summer Session who are forced to leave before the beginning of the second week may expect a refund of two-thirds of their tuition, those who leave before the beginning of the third week may have one-third of their tuition refunded. Students leaving after the beginning of the third week of classes are not entitled to any refund.

Students leaving after the third day of classes are required to fill out a withdrawal form.

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Room rent is \$10.00 per week for single room occupancy and \$7.50 for double. A room and key deposit of \$10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The \$10.00 will be returned in full if the room is undamaged when the key is returned. The University Dining Hall will be open for breakfast and luncheon.

VETERANS

Veteran's attending the 1960 Summer School should present their supplemental Certificate of Eligibility at the Veteran's window in the Bursar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1960 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Howard B. Jefferson, *President*

Robert M. Hyde, *Vice President*

H. Donaldson Jordan, *Dean of the College*

Roger C. Van Tassel, *Director of the Summer School*

SUMMER SCHOOL STAFF

(All are members of the Clark University Faculty unless otherwise indicated)

Vernon Ahmadian, Ph.D., *Assistant Professor of Biology*

Karl O. E. Anderson, Ph.D., *Associate Professor of English*

Robert W. Baker, Ph.D., *Associate Professor of Psychology*

George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*

Raymond E. Barbera, Ph.D., *Assistant Professor of Romance Languages*

James F. Beard, Jr., Ph.D., *Associate Professor of English*

Robert N. Beck, Ph.D., *Associate Professor of Philosophy*

Henry C. Borger, Jr., Ph.D., *Associate Professor of Education*

Guy H. Burnham, A.M., *Instructor in Geography and Cartographer*

William H. Carter, Jr., Ph.D., *Associate Professor of English*

Geoffrey Clive, Ph.D., *Assistant Professor of Philosophy*

Morris H. Cohen, Ph.D., *Associate Professor of Government*

James S. Edwards, M.A., *Associate Professor of German*

Gerald N. Grob, Ph.D., *Assistant Professor of American History*

George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration*

H. Donaldson Jordan, Ph.D., *Professor of English History*

Robert J. Kastenbaum, Ph.D., *Lecturer in Psychology*

Frederick W. Killian, LL.B., *Associate Professor of Sociology*

James A. Maxwell, Ph.D., *Professor of Economics*

F. Eugene Melder, Ph.D., *Professor of Economics*

George H. Merriam, A.M., *Director of Admissions, Lecturer in History*

John T. Murphey, B.S. in Ed., *Visiting Lecturer, Museum Instructor, Worcester Art Museum*

Howard W. Nicholson, Ph.D., *Associate Professor of Economics*

Theodore Nicol, Ph.D., *Associate Professor of Romance Languages*

Rudolph F. Nunnemacher, Ph.D., *Professor of Biology*

Relly I. Raffman, M.A., *Assistant Professor of Music*

J. Richard Reid, Ph.D., *Professor of Romance Languages*

Harris Rosenkrantz, Ph.D., *Associate Professor (Affiliate) of Biology*

Stanley Sultan, Ph.D., *Assistant Professor of English*

Barry D. Targan, M.A., *Instructor in English*

Henry J. Warman, Ph.D., *Professor of Geography*

Karl S. Weimar, Ph.D., *Visiting Lecturer, Associate Professor of German, Brown University*

Morton Wiener, Ph.D., *Associate Professor of Psychology*

Joachim F. Wohlwill, Ph.D., *Assistant Professor of Psychology*

SUMMER INSTITUTE FOR HIGH SCHOOL AND JUNIOR COLLEGE TEACHERS OF MATHEMATICS

Supported by the National Science Foundation

Charles T. Bumer, *Director*

Holbrook M. MacNeille, Ph.D., *Visiting Lecturer, Professor of Mathematics,
Washington University*

I. H. Rose, Ph.D., *Visiting Lecturer, Associate Professor of Mathematics,
University of Massachusetts*

John S. Stubbe, Ph.D., *Associate Professor of Mathematics*

On Wednesday of each week, lectures will be given by members of the staff or, occasionally, by visiting mathematicians.

RESEARCH PARTICIPATION FOR TEACHER TRAINING

Supported by the National Science Foundation

Arthur E. Martell, *Director*

Richard L. Gustafson, Ph.D., *Postdoctoral Research Fellow in Coordination
Compounds*

Dietrich Heinert, Ph.D., *Postdoctoral Research Fellow in Organic Synthesis*

Kazuo Nakamoto, D.Sc., *Assistant Professor of Chemistry and Research
Spectroscopist*

William R. Nes, Ph.D., *Associate Professor of Chemistry (Biochemistry)*

Thomas T. Sugihara, Ph.D., *Associate Professor of Chemistry (Radiochem-
istry)*

Edward N. Trachtenberg, Ph.D., *Assistant Professor of Chemistry (Organic
Chemistry)*

A series of thirty lectures given by specialists in various fields, some by other members of the staff, will be included as an integral part of the research training program.

COUNSELING AND GUIDANCE TRAINING INSTITUTE

Supported by U.S. Office of Education of the
Department of Health, Education and Welfare

Vernon Jones, *Director*

Robert W. Baker, Ph.D., *Associate Professor of Psychology*

James M. Coffee, Ed.D., *Associate Professor of Education*

Warren D. Gribbons, Ed.D., *Assistant Professor of Education*

In addition to the above full time staff, there will be five visiting specialists each of whom will give one or more lectures or seminars.

Clark University

MAIN CAMPUS



- | | | |
|-------------------------|---------------------------|-------------------------|
| 1. CAMPUS DIRECTOR | 12. FACULTY HOME | 18. INFIRMARY |
| 2. JEFFERSON LABORATORY | 13. MEN'S DORMITORY | 19. UNIVERSITY BUILDING |
| 3. WOMEN'S DORMITORY | 14. EASTBROOK HALL | |
| 4. PRESIDENT'S HOME | 15. UNIVERSITY APARTMENTS | |
| 5. DEAN'S HOME | | |
| 6. GEOGRAPHY BUILDING | | |
| 7. STUDENT UNION | | |
| 8. SUMMIT GYMNASIUM | | |
| 9. PHYSICS | | |
| 10. TENNIS COURTS | | |
| 11. CLARK HALL | | |
| 12. EASTWOOD HALL | | |
| 13. LIBRARY | | |

COURSE OFFERINGS

Biology

Interession

F.—BIO.—S.17 GENERAL ECOLOGY

Rudolph F. Nunnemacher, *Professor of Biology*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, lakes and streams. Shorter field trips to Mt. Monadnock, the virgin forest at Bradford, N. H., the North Shore, and the Barnstable Dunes on Cape Cod will be taken during the week. Some field work at a fresh-water lake will also be undertaken. Previous courses in Biology are helpful but not required.

Laboratory fee \$10.00

Mon. through Fri. at 9:00 and 2:00

Clark Hall 206

All day field trips to be arranged

Summer Session

F.—BIO.—S.11a GENERAL BIOLOGY—THE PLANT KINGDOM

Vernon Ahmadjian, *Assistant Professor of Biology*

Introduction to the fundamentals of biology as illustrated by the plant kingdom will cover such questions as: evolution, inter-relationships; growth, and distribution of plants and their reaction to the environment. Field work may be included.

Laboratory fee \$10.00

Mon. through Fri., 8:00–9:10 A.M.

Clark Hall 206

Lecture-Laboratory: Tues. and Thurs., 1:00–4:00 P.M.

BIO.—S.262 INSTRUMENTAL PROCEDURES IN BIOLOGICAL INVESTIGATIONS

Harris Rosenkrantz, *Associate Professor (Affiliate) of Biology*

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy will be carried out. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry, and radioactive tracers.

Laboratory fee \$10.00

Lectures Mon. through Thurs., 8:00–9:10 A.M.

Clark Hall 207

Laboratory Fri. 8:00–12:00 Noon

BIO.—S.370 RESEARCH IN BIOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Business Administration

Summer Session

*B.A.—S.16 BUSINESS STATISTICS

George E. Hargest, *Associate Professor of Business Administration*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises.

Clark Hall 217

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double Course, two classes daily, through Summer Session

F.—B.A.—S.17 PUBLIC SPEAKINGJames F. Beard, Jr., *Associate Professor of English*

For course description see section on English.

(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 106

Mon., Wed. and Fri., 8:00–9:50 P.M.

F.—B.A.—S.150a PRINCIPLES OF MARKETINGGeorge A. Balko, Jr., *Assistant Professor of Business Administration*

The efficiency, social implications, and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer.

Clark Hall 215

Mon., Wed. and Fri., 8:00–9:50 P.M.

B.A.—S.154b RETAILING PRINCIPLESGeorge A. Balko, Jr., *Assistant Professor of Business Administration*

A survey of the major phases of retailing including discussions of the retailer in our economy, the store and its organizations, aspects of buying and selling, operating activities and personnel, and retail control. For business degree only.

Clark Hall 215

Mon., Wed. and Fri., 6:00–7:50 P.M.

B.A.—S.184a MANAGEMENT–LABOR RELATIONSF. Eugene Melder, *Professor of Economics*

The subject matter of the course is management–employee relationships with special reference to union and management bargaining, shop industrial situations and the law of labor relations. Discussion and case methods are employed.

Clark Hall 212

Mon. through Fri., 10:30–11:40 A.M.

Economics*Interession***EC.—S.13 MONEY AND BANKING**James A. Maxwell, *Professor of Economics*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Clark Hall 209

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session***EC.—S.140b CONSUMER ECONOMICS**F. Eugene Melder, *Professor of Economics*

Consumers' roles in a market economy and their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private noncommercial agencies, the government, and the cooperative movement.

Clark Hall 215

Mon. through Fri., 9:15–10:25 A.M.

EC.—S.229 ECONOMICS OF TRANSPORTATIONHoward W. Nicholson, *Associate Professor of Economics*

A study of the transportation industry of the United States; its structure and economic performance. Attention is focused on forces affecting investment in transportation facilities and the pricing of transportation services and the implications for transportation trends and policies.

Clark Hall 217

Mon. through Fri., 8:00–9:10 A.M.

EC.—S.28 RESEARCH IN ECONOMIC PROBLEMS

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Education

Summer Session

ED.—S.201b EDUCATIONAL PSYCHOLOGY

To be announced

A study of the psychological principles of learning and teaching in the schools. Attention will be given to motivation, growth and learning as they relate to emotional, social, and intellectual development. The problem of individual differences and the early identification of special abilities will receive attention. Procedures will include class discussion, readings, and attention to individual teaching problems upon which the students of the class may desire assistance.

Clark Hall 303

Mon. through Fri., 9:15–10:25 A.M.

ED.—S.208 METHODS AND MATERIALS IN SECONDARY EDUCATION

Henry C. Borger, Jr., *Associate Professor of Education*

Methods of approach, presentation, development, and evaluation in the junior and senior high school classroom. Time will be given to various types and sources of materials and to actual demonstration and application of theory.

Clark Hall 209

Mon., Wed. and Fri., 6:00–7:50 P.M.

ED.—S.228 GUIDANCE AND EVALUATION

To be announced

A study of the measurement and other fact gathering techniques basic to educational and vocational guidance and counseling. Special attention will be given to the more important methods of pupil evaluation and their possible use in guidance and counseling in the schools.

Clark Hall 303

Mon. through Fri., 11:45 A.M.–12:55 P.M.

ED.—S290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

An examination of aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Clark Hall 106

Mon. through Fri., 8:00–9:10 A.M.

English

Interession

F.—ENG.—S.11a ENGLISH COMPOSITION AND LITERATURE

Karl O. E. Anderson, *Associate Professor of English*

The purpose of English 11 is to develop clarity and accuracy in reading and writing. After a short review of the principles of rhetoric, the course will be devoted to the study of expository essays and short stories. Themes and individual conferences. This course, together with English 11b, is a requirement for the Clark A.B.

Clark Hall 301

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

ENG.—S.143a MODERN BRITISH FICTION

Stanley Sultan, *Assistant Professor of English*

Representative works of the major British writers of fiction in the twentieth century. Short stories and novels of Joseph Conrad, D. H. Lawrence, Virginia Woolf and James Joyce will be studied.

Clark Hall 212

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—ENG.—S.11b ENGLISH COMPOSITION AND LITERATURE

Barry D. Targan, *Instructor in English*

This second half of the year course aims to help the student develop sound critical principles in evaluating fiction and poetry.

Clark Hall 106

Mon. through Fri., 9:15–10:25 A.M.

F.—ENG.—S.12 PUBLIC SPEAKING

James F. Beard, Jr., *Associate Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conference, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12)

Clark Hall 106

Mon. Wed. and Fri., 8:00–9:50 P.M.

ENG.—S.106 CONTEMPORARY AMERICAN FICTION

James F. Beard, Jr., *Associate Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, and others.

Clark Hall 106

Mon., Wed. and Fri., 6:00–7:50 P.M.

ENG.—S.120 INTRODUCTION TO LITERARY CRITICISM

William H. Carter, Jr., *Associate Professor of English*

This course will involve the discussion of a selection of critics, from Aristotle to the present, who have been particularly influential in English and American literature.

Clark Hall 106

Mon. through Fri., 10:30–11:40 A.M.

ENG.—S.125 THE SHORT STORY

William H. Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Clark Hall 106

Mon. through Fri., 11:45 A.M.–12:55 P.M.

Fine Arts

Interession

F.—F.A.—S.12 INTRODUCTION TO MUSIC

Relly I. Raffman, *Assistant Professor of Music*

What to listen for in Music. Designed for the student with no previous musical training or experience, it will deal with the basic theoretical elements and materials of music.

Atwood Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.A.—S.195 INTRODUCTION TO CONTEMPORARY ART

John T. Murphy, *Museum Instructor, Worcester Art Museum*

Study of basic ways and means for forming and understanding contemporary works in art and design. Illustrated lectures and criticisms of experiments done with simple materials in black and white and in color. Work in line, shape, patterns, volume, color, and space in drawing and painting. No previous formal training is required for the beginner. A review of fundamental ideas for the advanced student and professional worker in the field of advertising and industrial design, and teaching. Satisfies Fine Arts requirement.

Atwood Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

Geography*Interession*

GEO.—S.12a INTRODUCTION TO WEATHER AND CLIMATE

Henry J. Warman, *Professor of Geography*

Practical exercises in meteorology and climatology, use of weather instruments, discussion of various theories.

Geography Bldg., Lecture Room

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—GEO.—S.191 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.

Geography Bldg.,
Cartography Lab.

Mon. through Fri., 1:30 P.M. and afternoon workshop

GEO.—S.291 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

Similar course to S.191 with additional work required for graduate credit.

Geography Bldg.,
Cartography Lab.

Mon. through Fri., 1:30 P.M. and afternoon workshop

GEO.—S.300 RESEARCH IN GEOGRAPHY

Graduate research studies may be carried out under direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

History and Government*Interession*

HIIST.—S.130a POLITICAL HISTORY OF THE UNITED STATES

Gerald N. Grob, *Assistant Professor of American History*

A study of the historical development of the Presidency, Congress, the Supreme Court and the Party System since the adoption of the Constitution, together with an examination of the outstanding personalities and issues in American political life from Washington to Eisenhower. Lectures will be supplemented by individual reports and discussion.

Clark Hall 104

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

HIST.—S.221a ENGLAND IN THE TWENTIETH CENTURYH. Donaldson Jordan, *Professor of English History*

The development of the United Kingdom from the time of its greatest power to the present struggle to maintain a world position.

Clark Hall 220

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session***HIST.—S.230b SOCIAL AND INTELLECTUAL HISTORY OF THE UNITED STATES**Gerald N. Grob, *Assistant Professor of American History*

This course will deal with the main currents in American thought and the development of social and intellectual institutions from the Civil War to the present.

Clark Hall 220

Mon., Wed., and Fri., 8:00–9:50 P.M.

HIST.—S.231 AMERICAN COLONIAL HISTORY, 1607–1775George H. Merriam, *Director of Admissions, Lecturer in History*

A survey course with particular emphasis upon the New England area from the time of the first settlements to the revolutionary period. America's colonial past will be studied through lectures and original documents. Field trips.

Clark Hall 220

Mon. through Fri., 9:15–10:25 A.M.

GOV.—S.251a AMERICAN POLITICAL PARTIESMorris H. Cohen, *Associate Professor of Government*

A study of the functioning of American party organizations, pressure groups, and the electorate in American politics. Emphasis is placed upon current problems and trends in the field.

Clark Hall 302

Mon. through Fri., 8:00–9:10 A.M.

GOV.—S.255 THE CONSTITUTION AND CIVIL LIBERTIESMorris H. Cohen, *Associate Professor of Government*

An analysis of recent problems in the field of civil liberties including among others: freedom of speech, press and religion, civil rights and the administration of justice, congressional investigations, and the guarantee of equal protection of the law—desegregation problems. The course is conducted primarily via analysis of Supreme Court decisions and will emphasize the case study method rather than lectures.

Clark Hall 302

Mon. through Fri., 10:30–11:40 A.M.

**GOV.—S.300 READING AND RESEARCH IN HISTORY AND GOVERNMENT
HIST.—S.300**

Reading or thesis courses for graduate students to be arranged with staff members.

LANGUAGES**French***Interession***F.—FR.—S.10 ELEMENTARY FRENCH REFRESHER**J. Richard Reid, *Professor of Romance Languages*

An intensive course in which the student will spend three weeks studying, practicing, speaking and reading French. The class will meet for three 50 minute periods each day, attendance being required at all classes, with laboratory work in pronunciation between class meetings. French table at lunch. Classes will meet at 8:00 to 8:50

(Reading), 10:50 to 11:40 (Grammar), 2:00 to 2:50 (Pronunciation and Conversation). This course is recommended as a refresher for out-of-practice French students before taking Intermediate French or more advanced courses. It can be taken as a substitute for the second half of French II at Clark, thus validating credit for the first half. Auditors are welcome on condition that they participate fully in the course. Limited to 14 students.

Clark Hall 106 Mon. through Fri., 8:00 and 10:50 A.M.; 2:00 P.M.

Summer Session

*F.—FR.—S.12 INTERMEDIATE FRENCH

Staff

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily for affording insights into the culture of France. Open to students who have had the elements of French in a first-year college course or the equivalent. Indivisible course.

Clark Hall 104 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*FR.—S.14 READINGS IN FRENCH LITERATURE

Staff

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent.

Library Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

German

*F.—GER.—S.11 INTRODUCTORY GERMAN

Karl S. Weimar, *Associate Professor of German, Brown University*

The regular material of the first year of college is covered: pronunciation, basic vocabulary, elements of grammar, composition, and reading of suitable German prose. An intensive course for students interested in devoting full time and complete attention to the study of German during the summer session.

Clark Hall 304 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*F.—GER.—S.12 INTERMEDIATE GERMAN

James S. Edwards, *Associate Professor of German*

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested.

Clark Hall 308 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Spanish

*F.—SP.—S.11 INTRODUCTORY SPANISH

Raymond E. Barbera, *Assistant Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.

Clark Hall 220 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double Course, two classes daily, through Summer Session

Mathematics

Summer Session

*MATH.—S.201 FUNDAMENTAL CONCEPTS OF MATHEMATICS

I. H. Rose, *Associate Professor of Mathematics, University of Massachusetts*

The course is designed for the teacher of mathematics in the secondary schools whose scholastic record in college is good but whose mathematical background is weak. This course will emphasize postulational thinking and the general and abstract nature of mathematics and will be concerned with the following topics: deductive logic, the number system, the algebra of sets, the basic concepts of analytic geometry, the idea of function, cardinal number.

There will be one section of Course S.201 with twelve participants. Not more than five persons other than members of the Institute may enter the course and permission of the Director of the Institute must be secured. Double course, 6 hours of credit, undergraduate or credit toward M.A. in Ed.

Clark Hall 218

Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

*MATH.—S.212 INTRODUCTION TO CALCULUS

John S. Stubbe, *Associate Professor of Mathematics*

Will include topics in analytic geometry, and careful study of the idea of function, limits, differentiation of algebraic functions and of certain transcendental functions, and the definite integral. 6 hours of credit, undergraduate or credit toward M.A. in Ed. Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured.

Clark Hall 301

Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

*MATH.—S.214 ADVANCED CALCULUS, INTRODUCTION TO ANALYSIS

Holbrook M. MacNeille, *Professor of Mathematics, Washington University*

This course is designed as an introductory course to Modern Analysis. From the properties of the real number system, a careful development of the concepts of limits, continuity, differentiability, and integrability will be undertaken, and the problems of elementary calculus reviewed from a more rigorous viewpoint. Extensions of these ideas will be made to functions of n variables including a discussion of point set theory of Euclidean n -space. In this connection partial differentiation (implicit and explicit), vector analysis, multiple integration, line and surface integrals, and implicit function theorems will be covered. Infinite sequences and series and improper integrals will be studied.

Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured. 6 hours of credit, graduate.

Clark Hall 305

Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

Philosophy

Intersession

PHIL.—S.112. PROBLEMS AND TRENDS IN CONTEMPORARY PHILOSOPHY

Geoffrey Clive, *Assistant Professor of Philosophy*

An introduction to problems and trends in contemporary philosophy from Pragmatism and Absolute Idealism to Existentialism and Logical Empiricism. Designed to provide the means by which men and women may understand and evaluate their own beliefs, and relate them to the philosophical bases of their culture. No previous work in philosophy is required.

Clark Hall 102

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Double Course, two classes daily, through Summer Session

Summer Session

PHIL.—S.119 BASIC ISSUES IN PHILOSOPHY: THE IDEA OF GOD

Robert N. Beck, *Associate Professor of Philosophy*

Reading and discussion of materials concerned with some of the fundamental and recurring problems in philosophy. Subject for 1960: the idea of God, as discussed in some of the classical religious and philosophical texts of Western culture.

Blakeslee House

Mon. through Fri., 9:15—10:25 A.M.

PHIL.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

The course description is given under Education.

Clark Hall 106

Mon. through Fri., 8:00—9:10 A.M.

Psychology*Intersession*

PSY.—S.172a THEORIES OF PERSONALITY

Robert W. Baker, *Associate Professor of Psychology*

A survey of the various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

Clark Hall 304

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—PSY.—S.11a GENERAL PSYCHOLOGY

Joachim F. Wohlwill, *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Clark Hall 320

Mon. through Fri., 10:30—11:40 A.M.

PSY.—S.103b THE ABNORMAL PERSONALITY

Morton Wiener, *Associate Professor of Psychology*

The course will be devoted to a study of the development of the abnormal personality and a survey of the major types of abnormal behavior.

Clark Hall 320

Mon. through Fri., 9:15—10:25 A.M.

PSY.—S.204b PERSONALITY EVALUATION

Robert J. Kastenbaum, *Lecturer in Psychology*

The purpose of this course is to provide an understanding of the principles, problems, and procedures of personality evaluation. It will include consideration of the nature of personality and its measurement, intelligence and its defects, and diagnostic testing designed to explore personality dynamics.

Clark Hall 320

Mon., Wed. and Fri., 8:00—9:50 P.M.

PSY.—S.350 RESEARCH IN PSYCHOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Sociology

Summer Session

SOC.—S.11b SOCIOLOGICAL ANALYSIS

Frederick W. Killian, *Associate Professor of Sociology*

This is an introductory course in understanding the society in which we live. How this system of customs, conventions, relationships has begun, grown and developed. It is a study of the framework of order and of institutions in which we find our needs and satisfactions and in which we relate to other people through status, playing roles, moving towards goals and interests. The emphasis will be on selected writings of men who are and have been important in sociology. We shall discuss the present situation of man and his possible destiny and the ways he can control that destiny.

Clark Hall 215

Mon. through Fri., 10:30–11:40 A.M.

SOC.—S.12a INTRODUCTION TO CULTURAL ANTHROPOLOGY

Frederick W. Killian, *Associate Professor of Sociology*

The evolution and development of man and his culture; basic concepts; the races of man and their distribution; processes of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

Clark Hall 215

Mon. through Fri., 11:45 A.M.–12:55 P.M.

COURSES OFFERED

BIOLOGY

S.11a	General Biology	8:00 A.M.	Ahmadjian
S.17	General Ecology	Interession	Nunnemacher
S.262	Instrumental Procedures in Biological Investigations	8:00 A.M.	Rosenkrantz
S.370	Research in Biology		Staff

BUSINESS ADMINISTRATION

S.16	Business Statistics (Double Course)	9:15 A.M., 2:00 P.M.	Hargest
S.17	Public Speaking	8:00 P.M.	Beard
S.150a	Principles of Marketing	8:00 P.M.	Balko
S.154b	Retailing Principles	6:00 P.M.	Balko
S.184a	Management-Labor Relations	10:30 A.M.	Melder

ECONOMICS

S.13	Money and Banking	Interession	Maxwell
S.140b	Consumer Economics	9:15 A.M.	Melder
S.229	Economics of Transportation	8:00 A.M.	Nicholson
S.28	Research in Econ. Problems		Staff

EDUCATION

S.201b	Educational Psychology	9:15 A.M.	To be announced
S.208	Meth. and Materials in Secondary Education	6:00 P.M.	Borger
S.228	Guidance and Evaluation	11:45 A.M.	To be announced
S.290b	Philosophy of Education	8:00 A.M.	Beck

ENGLISH

S.11a	English Comp. and Literature	Interession	Anderson
S.11b	English Comp. and Literature	9:15 A.M.	Targan
S.12	Public Speaking	8:00 P.M.	Beard
S.106	Contemporary Amer. Fiction	6:00 P.M.	Beard
S.120	Intro. to Literary Criticism	10:30 A.M.	Carter
S.125	The Short Story	11:45 A.M.	Carter
S.143a	Modern British Fiction	Interession	Sultan

FINE ARTS

S.12	Introduction to Music	Interession	Raffman
S.195	Intro. to Contemporary Art	6:00 P.M.	Murphey

GEOGRAPHY

S.12a	Intro. to Weather and Climate	Interession	Warman
S.191	Cartography (Single or Double Course)	1:30 P.M.	Burnham
S.291	Cartography (Single or Double Course)	1:30 P.M.	Burnham
S.300	Research in Geography		Staff

HISTORY AND GOVERNMENT

S.130a	Political Hist. of the U.S.	Interession	Grob
S.221a	England in the 20th Century	Interession	Jordan
S.230b	Social and Intellectual Hist. of the U.S.	8:00 P.M.	Grob
S.231	American Colonial History	9:15 A.M.	Merriam
S.251a	American Political Parties	8:00 A.M.	Cohen
S.255	Constitution and Civ. Liberties	10:30 A.M.	Cohen
S.300	Reading and Research in Hist. and Government		Staff

LANGUAGES

S.10	Elementary Fr. Refresher (Single Course)	Interession	Reid
S.12	Intermediate French (Double Courses)	9:15 A.M., 2:00 P.M.	Staff
S.14	Readings in French Lit. " "	9:15 A.M., 2:00 P.M.	Staff
S.11	Introductory German " "	9:15 A.M., 2:00 P.M.	Weimar
S.12	Intermediate German " "	9:15 A.M., 2:00 P.M.	Edwards
S.11	Introductory Spanish " "	9:15 A.M., 2:00 P.M.	Barbera

MATHEMATICS (NSF Institute)

(Double Courses)

S.201	Fundamental Concepts of Mathematics	9:15 A.M., 10:45 A.M.	Rose
S.212	Introduction to Calculus	9:15 A.M., 10:45 A.M.	Stubbe
S.214	Advanced Calculus, Introduction to Analysis	9:15 A.M., 10:45 A.M.	MacNeille

PHILOSOPHY

S.112	Problems and Trends in Contemporary Philosophy	Interession	Clive
S.119	Basic Issues in Philosophy: The Idea of God	9:15 A.M.	Beck
S.290b	Philosophy of Education	8:00 A.M.	Beck

PSYCHOLOGY

S.11a	General Psychology	10:30 A.M.	Wohlwill
S.103b	The Abnormal Personality	9:15 A.M.	Wiener
S.172a	Theories of Personality	Interession	Baker
S.204b	Personality Evaluation	8:00 P.M.	Kastenbaum
S.350	Research in Psychology		Staff

SOCIOLOGY

S.11b	Sociological Analysis	10:30 A.M.	Killian
S.12a	Introduction to Cult. Anthropology	11:45 A.M.	Killian

Please send me a registration card for the 1960 Clark University Summer School so that I may preregister.

My academic status is:

College Graduate ☐ College Undergraduate ☐

Special Student ☐ Clark University Evening College ☐
(not a degree candidate)

I (have, have not) previously attended the Clark University Summer School.

NAME

ADDRESS

City Zone State

Return to

SUMMER SCHOOL OFFICE, CLARK UNIVERSITY,
950 MAIN STREET, WORCESTER, MASS.

Education 345. Counseling and Guidance - Training Institute sponsored by U. S. Office of Education.

The Institute, running from June 27 to August 10, is designed to provide advanced instruction in counseling and guidance. It will meet for a minimum of $5\frac{1}{2}$ hours daily for 5 days per week. The three main areas to be covered at an advanced and professional level are: Principles of counseling and guidance; personality needs and development as related to counseling; and tests and other evaluative methods applied to guidance. The instruction will be by lectures, discussions, seminars, and supervised practice in counseling of high school students.

The course (Institute) will carry six semester hours of graduate credit in Education.

not taken into account for purposes of the \$300 per month limitation in the case of a teacher who is not a candidate for a degree. (For more detailed information, see Revenue Ruling 58-498, published in Internal Revenue Bulletin No. 1958-41, October 13, 1958, pp. 15-17. This issue of the Bulletin can be obtained for 20 cents from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.)

In cases where a teacher's expenses in attending an institute are greater than his subvention from the Institute, it is suggested that he see Section 162 of the Internal Revenue Code of 1954.

EXPENSE, LIVING ACCOMMODATIONS

There will be no tuition charge. The University Book Store is in Jefferson Hall where participants may purchase books and materials needed in their courses.

Three new buildings on the campus will be available for members of the Institute during the summer of 1960. They are a women's dormitory, a men's dormitory, and Jefferson Hall, a Union building with dining hall, large snack bar, book store, student and faculty lounges.

Rates for rooms in the men's and women's dormitory are as follows (linen included): \$7.50 per week per person, double occupancy; \$10.00 per week per person, single occupancy. One floor of one of the dormitories will be available for married couples without children, or with children who are at least ten years of age.

Every participant living in the dormitories is required to take his meals in Jefferson Hall Monday through Saturday noon, a total of 17 meals at a cost of \$18.00 a week. All participants will be present at luncheon daily Monday through Friday. The charge for luncheon for commuters will be \$1.00, a total of \$30.00 for the term. Half the charge for room and for board will be deducted from the stipend check issued on June 27; the other half from the check dated July 18.

The University has no housekeeping facilities for families. The Associate Director will have a list of apartments which may prove helpful to those who need housekeeping quarters, and his office will give advice and what help it can, but the University does not assume responsibility for finding satisfactory housing for participants who do not live in the dormitories.

ELIGIBILITY FOR MEMBERSHIP

The thirty high school and preparatory school teachers to be elected to membership in the Institute will be selected on the basis of mathematical training, teaching experience in high school and primarily for their apparent ability to profit from the program of the Institute and for their capacity to develop as teachers

of mathematics. Any person under fifty-five years of age, a graduate of a four-year college, predominantly engaged in high school work, who is teaching at least one full course in mathematics in junior or senior high school during the year 1959-60, is eligible to apply for membership.

Twenty-five junior college teachers will be selected on the basis of mathematical training and junior college teaching experience. Any person who has graduated from a four-year college and is teaching courses in mathematics in a junior college during the year 1959-60 is eligible to apply for membership in the Institute. A teacher sharing time between high school and junior college will be considered to be in the institution where the majority of his mathematics teaching is carried on.

Applicants who are presently in the Armed Forces and who entered service directly from positions as mathematics teachers are eligible for stipends, other things being equal, and their being chosen will not affect adversely their educational rights as Korean Conflict veterans. They may not receive funds through the National Science Foundation and the Veterans Administration simultaneously.

Candidates whose attendance has been supported at past Institutes will be carefully considered by the Staff in an attempt to measure their capacity to benefit from the Clark Institute.

Final selection for membership in the Institute will be made by the Director and the Staff of the Institute. Attention will be given to college scholastic record, especially in courses in mathematics. The Staff will want to see evidence that the candidate is committed to the profession of teaching.

Formal applications must be postmarked not later than February 15, 1960. Candidates will be notified of selection or rejection on or before March 15, 1960, and they must reply, accepting or rejecting selection, before April 1, 1960. A number of alternates will be chosen before March 15 and applicants so designated will be notified and given an opportunity to accept or refuse such a classification. In the case of a rejection of an offered membership by a successful candidate, an alternate will be selected for membership and notified as soon as possible.

APPLICATION FOR MEMBERSHIP

Anyone who is eligible under the general terms outlined above may apply. Application forms should be obtained from the office of: Summer Institute for Teachers of Mathematics, Clark University, Worcester 10, Massachusetts. Completed applications should be sent *only* to Dr. Charles T. Bumer, Director, NSF Summer Institute, Clark University, Worcester 10, Massachusetts.

Classes meet daily, Monday through Friday—9:00 to 10:10 A.M. and 2:00 to 3:10 P.M. (Except Fr. S.10)—3 credits

Bio. S.17 General Ecology
Ec. S.13 Money and Banking
Eng. S.11a English Comp. and Literature
Eng. S.143a Modern British Fiction
F.A. S.12 Introduction to Music
Geo. S.12a Intro. to Weather and Climate

Hist. S.130a Political History of the U.S.
Hist. S.221a England in the Twentieth Century
Fr. S.10 Elementary French Refresher
Phil. S.112 Problems and Trends in Contemporary Philosophy
Psy. S.172a Theories of Personality

JUNE 27 - SUMMER SESSION - AUGUST 12

Morning Classes meet daily Monday through Friday—3 credits

8:00 Bio. S.11a General Biology Ed. S.290b Philosophy of Education
to Bio. S.262 Instrumental Procedures Gov. S.251a Amer. Political Parties
9:10 in Bio. Investigations Phil. S.290b Philosophy of Education
Ec. S.229 Econ. of Transportation
9:15 Ec. S.140b Consumer Economics Hist. S.231 Amer. Colonial History
to Ed. S.201b Educational Psychology Phil. S.119 Basic Issues in Phil.
10:25 Eng. S.11b Eng. Comp. and Lit. Psy. S.103b The Abnormal Personality
10:30 B.A. S.184a Management-Labor Rels. Psy. S.11a General Psychology
to Eng. S.120 Intro. to Lit. Criticism Soc. S.11b Sociological Analysis
11:40 Gov. S.255 Const. & Civ. Liberties
11:45 Ed. S.228 Guidance and Evaluation Soc. S.12a Intro. to Cult. Anthrop.
to Eng. S.125 The Short Story

1:30 Geo. S.191 Cartography
P.M. Geo. S.291 Cartography

Evening Classes meet Monday, Wednesday and Friday—3 credits

6:00 B.A. S.154b Retailing Principles Eng. S.106 Contemp. Amer. Fiction
to Ed. S.208 Methods & Materials in F.A. S.195 Intro. to Contemp. Art
7:50 Secondary Education
8:00 B.A. S.17 Public Speaking Hist. S.230b Soc. & Intell. Hist. of U.S.
to B.A. S.150a Principles of Marketing Psy. S.204b Personality Evaluation
9:50 Eng. S.12 Public Speaking

TWICE DAILY COURSES

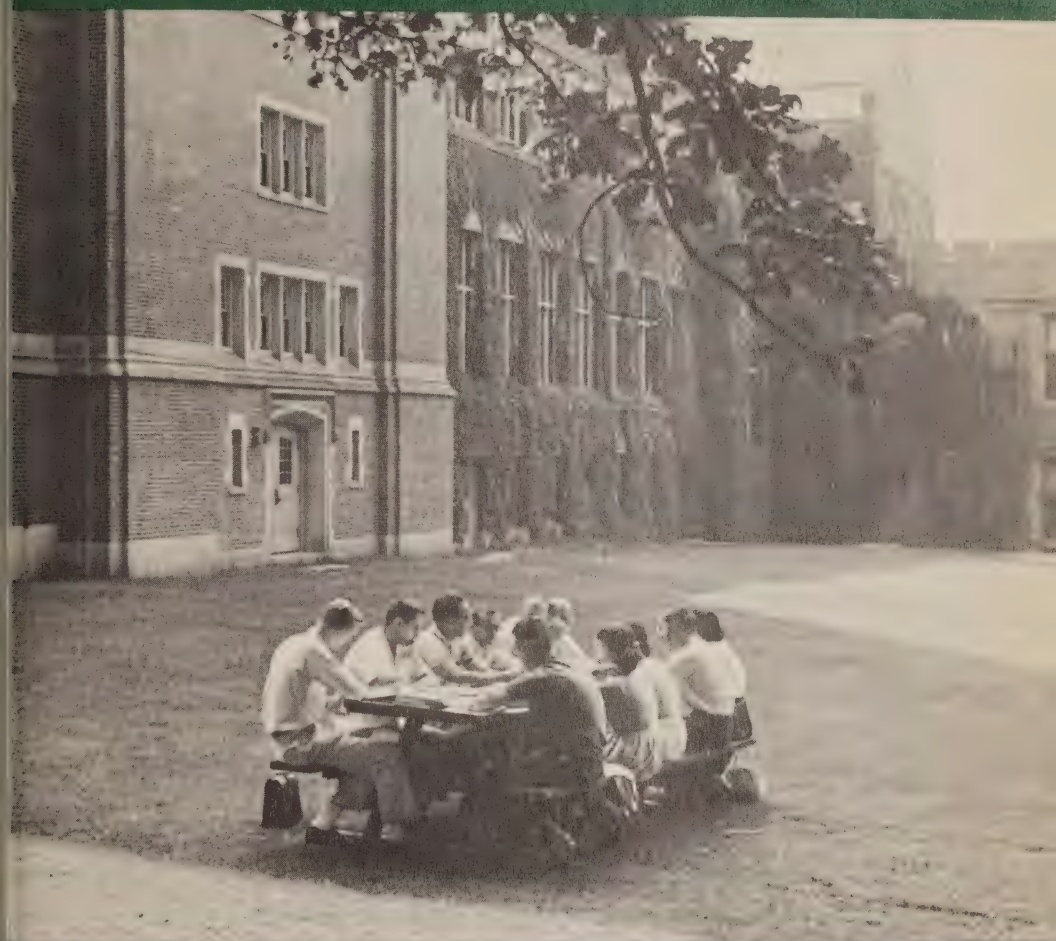
Two Class Meetings Monday through Friday

B.A. S.16 Business Statistics 9:15 & 2:00
Math. S.201 Fundamental Concepts 9:15 & 10:45
Math. S.212 Intro. to Calculus 9:15 & 10:45
Math. S.214 Adv. Calculus, Intro. to Analysis 9:15 & 10:45
Fr. S.12 Inter. French 9:15 & 2:00
Fr. S.14 Readings in Fr. Lit. 9:15 & 2:00
Ger. S.11 Intro. German 9:15 & 2:00
Ger. S.12 Inter. German 9:15 & 2:00
Sp. S.11 Intro. Spanish 9:15 & 2:00



Clark University Bulletin

WORCESTER, MASSACHUSETTS



Summer School - 1961

Intersession, June 12 to July 1
Summer Session, July 5 to August 19

CALENDAR

JUNE

- 12 Monday, *Interession Registration* 9-12 noon
First class meeting 2 P.M.
- 28 Wednesday, Registration for evening classes

JULY

- 1 Saturday, Examinations for Interession courses, 9-12 noon
- 5 Wednesday, *Summer Session Registration* for day classes 9-12 noon
Evening classes begin 6 P.M.
- 6 Thursday, Day classes begin 8 A.M.
- 26 Wednesday, Examinations in double courses concluding after first three weeks
- 27 Thursday, Beginning of double courses of second three weeks

AUGUST

- 16 Wednesday, No day classes
Examinations for evening classes meeting at 6 P.M.—7 to 10 P.M.
- 17 Thursday, Examinations for classes meeting at 8 A.M.—9 to 12 noon
- 18 Friday, Examinations for classes meeting at 9:15 A.M.—9 to 12 noon
for evening classes meeting at 8 P.M.—7 to 10 P.M.
- 19 Saturday, Examinations for classes meeting at 10:30 A.M.—9 to 12 noon
for classes meeting at 11:45 A.M.—2 to 5 P.M.

1961

JUNE						
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JULY						
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AUGUST						
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25	26	27	28	29	30	31

Clark University SUMMER SCHOOL

Worcester, Massachusetts

Interession, June 12 to July 1

Summer Session, July 5 to August 19

1961

The Clark University Bulletin is published in February, April, June, July, August, September, October, and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: The Summer School, Clark University, 950 Main Street, Worcester 10, Massachusetts.

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning. Active participation by the students in class discussions is encouraged.

Courses are available in the arts and sciences at both the graduate and undergraduate level, permitting students to accelerate their work toward a degree. In addition, the selection of courses in the modern languages permits current and prospective graduate students to better prepare themselves for graduate study.

There is a variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have part time summer jobs during the day and wish to gain academic credit at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library employing the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular. The fine tennis courts will be available for use by Summer School students.

SPECIAL PROGRAMS

In this summer's offerings there are several special programs of interest. Under the direction of Dr. John S. Stubbe a "Summer Institute for Mathematics Teachers in Secondary Schools and Junior Colleges" will again be offered under National Science Foundation sponsorship. The Institute begins July 5 and ends August 15, 1961, and will be conducted by the Department of Mathematics. The Institute, planned for a total of fifty-five participants, has the principal aim of strengthening the mathematics background and professional competence of selected teachers.

The National Science Foundation will also sponsor in the field of chemistry, a program of "Research Participation for College Chemistry Teachers." This ten-week program beginning June 19, under the supervision of Dr. Gerson Kegeles, will be open to seven college chemistry teachers possessing at least a master's degree in chemistry. Each participant will become associated with one of the various chemistry research projects now being carried on in the department.

The United States Office of Education in the Department of Health, Education and Welfare will sponsor a "Counseling and Guidance Training Institute" under the direction of Dr. Vernon Jones of the Department of Education. This program is designed to provide advanced instruction in counseling and guidance for thirty secondary school educators. This Institute will run from July 3 to August 18, and will carry six semester hours of graduate credit in Education.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Science in Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff other than those listed in the Summer School Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, statistics and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 A.M. and at 2:00 P.M., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings.

Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge, and application for it should be made in the Summer School office. There is a \$1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$85.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period.

Students who attend not more than three days of classes in either the Intersession or Summer Session and are forced to withdraw with just cause, may receive a refund of their tuition on applying in writing to the Director of the Summer School. Students of the Summer Session who are forced to leave before the beginning of the second week may expect a refund of two-thirds of their tuition, those who leave before the beginning of the third week may have one-third of their tuition refunded. Students leaving after the beginning of the third week of classes are not entitled to any refund.

Students leaving after the third day of classes are required to fill out a withdrawal form.

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Room rent is \$10.00 per week for single room occupancy and \$7.50 for double. A room and key deposit of \$10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The \$10.00 will be returned in full if the room is undamaged when the key

is returned. The University Dining Hall will be open for breakfast and luncheon during the Intersession and for all three meals during the Summer Session from Monday morning through Saturday noon.

VETERANS

Veteran's attending the 1961 Summer School should present their supplemental Certificate of Eligibility at the Veteran's window in the Bursar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1961 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Howard B. Jefferson, *President*
 Robert M. Hyde, *Vice President*
 Robert F. Campbell, *Dean of the College*
 Roger C. Van Tassel, *Director of the Summer School*

SUMMER SCHOOL STAFF

(All are members of the Clark University Faculty unless otherwise indicated)

Merritt G. Abrash, M.I.A., *Instructor in History*
 Karl O. E. Anderson, Ph.D., *Associate Professor of English*
 Karl J. Arndt, Ph.D., *Professor of German*
 Robert W. Baker, Ph.D., *Associate Professor of Psychology*
 George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*
 Raymond E. Barbera, Ph.D., *Assistant Professor of Romance Languages*
 James F. Beard, Jr., Ph.D., *Associate Professor of English*
 Robert N. Beck, Ph.D., *Associate Professor of Philosophy*
 Robert M. Bibace, Ph.D., *Assistant Professor (Affiliate) in Clinical Psychology*
 Henry C. Borger, Jr., Ph.D., *Associate Professor of Education*
 Guy H. Burnham, A.M., *Instructor in Geography and Cartographer*
 William H. Carter, Jr., Ph.D., *Associate Professor of English*
 Morris H. Cohen, Ph.D., *Associate Professor of Government*
 Thomas G. Devine, M.A., *Visiting Lecturer in Education*
 James S. Edwards, M.A., *Associate Professor of German*
 George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration*
 Edward H. Hastings, M.A., *Lecturer in English*
 Robert Kastenbaum, Ph.D., *Lecturer in Psychology*
 Frederick W. Killian, LL.B., *Associate Professor of Sociology*
 Robert E. Lingner, M.A., *Instructor in Geology*
 Curtis F. Marchant, M.A., *Instructor in Romance Languages*
 F. Eugene Melder, Ph.D., *Professor of Economics*
 George H. Merriam, M.A., *Director of Admissions, Lecturer in History*
 John T. Murphey, B.S. in Ed., *Visiting Lecturer, Museum Instructor, Worcester Art Museum*
 Theodore Nicol, Ph.D., *Associate Professor of Romance Languages*
 Sven Nilsson, Fil. Lic., *Visiting Lecturer, University of Uppsala, Sweden*
 Harris Rosenkrantz, Ph.D., *Associate Professor (Affiliate) of Biology*
 Stanley Sultan, Ph.D., *Assistant Professor of English*
 Henry J. Warman, Ph.D., *Professor of Geography*
 James W. Wightman, M.A., *Lecturer in Economics*
 Richard C. Wiles, M.A., *Lecturer in Economics*

SUMMER INSTITUTE FOR HIGH SCHOOL AND JUNIOR COLLEGE TEACHERS OF MATHEMATICS

Supported by the National Science Foundation

John S. Stubbe, *Director*

Richard J. Kohlmeyer, M.A. in Ed., *Associate Professor of Mathematics, Albright College*

Stewart M. Robinson, Ph.D., *Assistant Professor of Mathematics, University of Rhode Island*

Yue-Kei Wong, Ph.D., *Associate Professor of Mathematics, University of Toledo*

On Wednesday of each week, lectures will be given by members of the staff or, occasionally, by visiting mathematicians.

COUNSELING AND GUIDANCE TRAINING INSTITUTE

Supported by U.S. Office of Education of the Department of Health, Education and Welfare

Vernon Jones, *Director*

Robert W. Baker, Ph.D., *Associate Professor of Psychology*

James M. Coffee, Ed.D., *Associate Professor of Education*

Warren D. Gribbons, Ed.D., *Associate Professor of Education*

In addition to the above full time staff, there will be four visiting specialists each of whom will give one or more lectures or seminars.

RESEARCH PARTICIPATION FOR COLLEGE CHEMISTRY TEACHERS

Supported by the National Science Foundation

Gerson Kegeles, *Director*

Per Aagaard, Cand. Rel. *Postdoctoral Research Fellow (Radiochemistry)*

John L. Bethune, Ph.D., *Assistant Professor of Chemistry (Physical Chemistry)*

William R. Nes, Ph.D., *Associate Professor of Chemistry (Biochemistry)*

Lawrence W. Nichol, Ph.D., *Postdoctoral Research Fellow (Biophysical Chemistry)*

Thomas T. Sugihara, Ph.D., *Associate Professor of Chemistry (Radiochemistry)*

Edward N. Trachtenberg, Ph.D., *Associate Professor of Chemistry (Organic Chemistry)*

Allan M. Zwickel, Ph.D., *Assistant Professor of Chemistry (Inorganic Chemistry)*

Each participant will become associated with one of the various chemistry research projects now being carried on in the department.

Clark University

MAIN CAMPUS



1. CAMPUS DIRECTORY
2. JONES CLARK HALL
3. EASTWOOD HALL
4. LIBRARY

5. GEOGRAPHY BUILDING
6. STUDENT UNION
7. ALUMNI GYMNASIUM
8. PHYSICS

9. JEFFERSON LABORATORY
10. WOMEN'S DORMITORY
11. PRESIDENT'S HOME
12. LOEHLER'S HOME

13. FACULTY HOME
14. MEN'S DORMITORY
15. ESTABROOK HALL
16. UNIVERSITY APARTMENTS

17. INFIRMARY
18. UNIVERSITY BUILDING

COURSE OFFERINGS

Biology

Summer Session

F.—B10.—S.11a GENERAL BIOLOGY—THE PLANT KINGDOM, ESPECIALLY IN ITS RELATION TO MAN

Sven Nilsson, *Fil. Lic., University of Uppsala, Uppsala, Sweden*

Introduction to the fundamentals of botany; interrelationships between plants, animals and man; distribution, economic uses of plants. Fieldwork and lectures.

Laboratory fee: \$10.00

Lecture: Mon. through Fri., 10:30–11:40 A.M.

Clark Hall

Laboratory: Tues. and Thurs., 1:30–4:30 P.M.

F.—B10.—S.17 GENERAL ECOLOGY

Sven Nilsson, *Fil. Lic., University of Uppsala, Uppsala, Sweden*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, lakes and streams. Shorter field trips to Mt. Monadnock, the virgin forest at Bradford, N.H., the North Shore, and the Barnstable Dunes on Cape Cod will be taken. Some field work at a fresh-water lake will also be undertaken. Previous courses in Biology are helpful but not required.

Laboratory fee: \$10.00

Lecture: Mon. through Fri., 11:45 A.M.—12:55 P.M.

Clark Hall

Laboratory: Two afternoons to be arranged.

BIO.—S.262 INSTRUMENTAL PROCEDURES IN BIOLOGICAL INVESTIGATIONS

Harris Rosenkrantz, *Associate Professor (Affiliate) of Biology*

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy will be carried out. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry, and radioactive tracers.

Laboratory fee: \$10.00

Lectures Mon. through Thurs., 8:00–9:10 A.M.

Clark Hall

Laboratory Fri. 8:00–12:00 Noon

BIO.—S.300 RESEARCH IN BIOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Business Administration

Intersession

B.A.—S.152b ADVERTISING

George A. Balko, Jr., *Assistant Professor of Business Administration*

Advertising as a tool of marketing. Topics studied include the economic functions of advertising, advertising research, media selection, advertising organizations and testing. (This course may not be counted toward the A.B. degree, but only toward a business degree.)

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

B.A.—S.184a MANAGEMENT-LABOR RELATIONSF. Eugene Melder, *Professor of Economics*

The subject matter of the course is management-employee relationships with special reference to union and management bargaining, grievance adjustment and the law of labor relations. Discussion and case methods are employed.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session****B.A.—S.16 BUSINESS STATISTICS**George E. Hargest, *Associate Professor of Business Administration*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

F.—B.A.—S.17 PUBLIC SPEAKINGJames F. Beard, Jr., *Associate Professor of English*

For course description see section on English.

(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Blakeslee House

Mon., Wed. and Fri., 8:00–9:50 P.M.

B.A.—S.252a MARKETING RESEARCHGeorge A. Balko, Jr., *Assistant Professor of Business Administration*

Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution.

Clark Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

Chemistry

CHEM.—S.300 RESEARCH

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Economics

*Summer Session***EC.—S.13 MONEY AND BANKING**James W. Wightman, *Lecturer in Economics*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Clark Hall

Mon. through Fri., 10:30–11:40 A.M.

EC.—S.21a BUSINESS CYCLESRichard C. Wiles, *Lecturer in Economics*

Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

Clark Hall

Mon., Wed. and Fri., 8:00–9:50 P.M.

*Double course, two classes daily through Summer Session.

EC.—S.28 RESEARCH IN ECONOMIC PROBLEMS

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Education

Summer Session

ED.—S.20b GEOGRAPHY IN EDUCATION

Henry J. Warman, *Professor of Geography*

For course description see section on Geography.

ED.—S.22 TEACHING OF READING AND LITERATURE IN THE UPPER ELEMENTARY AND LOWER SECONDARY GRADES

Thomas G. Devine, *Visiting Lecturer in Education*

This course is designed to help teachers increase pupils' understanding and pleasure in reading. The first part is concerned with the nature of the reading process, higher reading skills, critical reading, semantics, and the diagnosis and treatment of a few major reading difficulties. The second part is concerned with the teaching of literature, including the aims of the literature program, the selection of materials, and the teaching of prose for understanding and appreciation.

Clark Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

ED.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

An examination of aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Clark Hall

Mon. through Fri., 8:00–9:10 A.M.

ED.—S.345 COUNSELING AND GUIDANCE TRAINING INSTITUTE

Staff

The Institute, running from July 3 to August 18, is designed to provide advanced instruction in counseling and guidance. It will meet for a minimum of 5½ hours daily for 5 days per week. The three main areas to be covered at an advanced and professional level are: Principles of counseling and guidance; personality needs and development as related to counseling; and tests and other evaluative methods applied to guidance. The instruction will be by lectures, discussions, seminars, and supervised practice in counseling of high school students.

The course (Institute) will carry six semester hours of graduate credit in Education. Not open to regular Summer School students—see Special Programs.

English

Intersession

F.—ENG.—S.11a ENGLISH COMPOSITION AND LITERATURE

Karl O. E. Anderson, *Associate Professor of English*

The purpose of English 11 is to develop clarity and accuracy in reading and writing. After a short review of the principles of rhetoric, the course will be devoted to the study of expository essays and short stories. Themes and individual conferences. This course, together with English 11b, is a requirement for the Clark A.B.

Blakeslee House

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

ENG.—S.128 THE IRISH LITERARY RENAISSANCEStanley Sultan, *Assistant Professor of English*

During the 35 years between the first Home Rule Bill (1886) and the establishment of the Free State (1922), the relatively tiny English-speaking population of Ireland produced, among a number of other writers, the greatest poet, novelist and dramatist of our time. In addition to Yeats, Joyce and Shaw, Oscar Wilde and such members of Yeats' Nationalist movement as the playwrights John Synge and Sean O'Casey, will be studied.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session***F.—ENG.—S.11b ENGLISH COMPOSITION AND LITERATURE**William H. Carter, Jr., *Associate Professor of English*

This second half of the year course aims to help the student develop sound critical principles in evaluating fiction and poetry.

Blakeslee House

Mon. through Fri., 9:15–10:25 A.M.

F.—ENG.—S.12 PUBLIC SPEAKINGJames F. Beard, Jr., *Associate Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conference, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Blakeslee House

Mon., Wed. and Fri., 8:00–9:50 P.M.

ENG.—S.106 CONTEMPORARY AMERICAN FICTIONJames F. Beard, Jr., *Associate Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, and others.

Clark Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

ENG.—S.125 THE SHORT STORYWilliam H. Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Blakeslee House

Mon. through Fri., 10:30–11:40 A.M.

Fine Arts*Interession***F.A.—S.122 AN INTRODUCTION TO SYMPHONIC MUSIC**Edward H. Hastings, *Lecturer in English*

This course is designed to give the student a better understanding of symphonic music by tracing its development from the time of Bach to the present. In addition to the study of representative orchestral works by Bach, Haydn, Mozart, Beethoven, Liszt, Berlioz, Brahms, Wagner and Debussy, the course will be concerned with the elements of classicism and romanticism in music and the evolution of symphonic forms and the symphony orchestra from the eighteenth century to the present. Students will be expected to spend at least one hour daily outside of class listening to recordings of the works to be discussed. Satisfies Fine Arts requirement.

Atwood Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.A.—S.195 INTRODUCTION TO CONTEMPORARY ART

John T. Murphey, *Museum Instructor, Worcester Art Museum*

Study of basic ways and means for forming and understanding contemporary works in art and design. Illustrated lectures and criticisms of experiments done with simple materials in black and white and in color. Work in line, shape, patterns, volume, color, and space in drawing and painting. No previous formal training is required for the beginner. A review of fundamental ideas for the advanced student and professional worker in the field of advertising and industrial design, and teaching. Satisfies Fine Arts requirement.

Atwood Hall

Mon., Wed. and Fri., 6:00–7:50 P.M.

Geography*Summer Session*

F.—GEO.—S.191 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.

Geography Bldg.,

Mon. through Fri., 1:30 P.M. and afternoon workshop

Cartography Lab.

GEO.—S.20b GEOGRAPHY IN EDUCATION

Henry J. Warman, *Professor of Geography*

The course will stress content and techniques of Geography as well as the conceptual framework in which Geography now operates and in which it may operate in the American school system. The foregoing will be discussed in their vertical sequence and also their horizontal relationships to both Social and Natural Sciences.

The utilization of latest books, maps, globes, charts, diagrams, pictures, will be realized in the form of a unit, or plan, which each participant in the course will be required to create. Such creations will be formulated so as to have immediate use in actual teaching situations.

Geography programs which provide for individual differences, various "tracks" or speed levels and enrichment courses will be outlined, and pertinent suggestions made regarding their implementation in both heterogeneous and homogeneous class groupings. Finally, careers in Geography will be described.

Geography Bldg., Lecture Room

Mon. through Fri., 11:45 A.M.–12:55 P.M.

GEO.—S.27a HUMAN GEOGRAPHY

Henry J. Warman, *Professor of Geography*

Some of the leading contributions to this field of Geography will be analyzed in order to form a background for the ensuing work of the course. The major geographic features of population-distribution, composition, trends will be treated. Then man's role in changing the surface of the earth will be studied by using geographic techniques.

Geography Bldg., Lecture Room

Mon. through Fri., 9:15–10:25 A.M.

GEO.—S.291 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

Similar course to S.191 with additional work required for graduate credit.

Geography Bldg.,

Mon. through Fri., 1:30 P.M. and afternoon workshop

Cartography Lab.

GEO.—S.300 RESEARCH IN GEOGRAPHY

Graduate research studies may be carried out under direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Geology*Interession***F.—GEOL.—S.12a PHYSICAL GEOLOGY**

Robert E. Lingner, *Instructor in Geology*

Designed to develop a knowledge and understanding of the earth's rock formations and their constant change under the affect of streams, glaciers, vulcanism, wind and other agents. Rock and mineral identification will be included. Emphasis will be placed on origin of local landscape features by occasional field excursions.

Geology Lab.

Lectures: Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Afternoon periods extended until 5:00 P.M. on Mon.,
Wed., Fri. for laboratory work or field trips.

History and Government*Interession***GOV.—S.143 PRINCIPLES OF INTERNATIONAL RELATIONS**

Merritt G. Abrash, *Instructor in History*

After examining the factors which determine the general nature of relations between states, several major international crises will be analyzed, with the object of uncovering the different methods of executing foreign policy and the elements which shape the foreign policies of particular states. The balance of power, ideology, imperialism, diplomacy, and international law and organization will be among the subjects brought into the discussion.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

HIST.—S.236 THE AMERICAN REVOLUTION, 1763-1789

George H. Merriam, *Director of Admissions, Lecturer in History*

The course is planned to cover in careful detail the growth of revolutionary opinion in the British colonies from the end of the Seven Years war to 1775, to describe the actual happenings of the Revolutionary War in some detail, with more attention given to the philosophical background of this period, and to show the reaction from revolution which came to fruition in the adoption of the Federal Constitution.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session***HIST.—S.233 THE WEST IN AMERICAN HISTORY**

Henry C. Borger, Jr., *Associate Professor of Education*

Beginning about the time of the American Revolution when the line of the frontier was at the Appalachian Mountains, this course will trace the movement of population, the growth of settlements, and the development of the American institutions as they advanced toward the Pacific Ocean. Social, geographic, and economic factors will be included with this historical study, which will conclude with a consideration of the influence of this westward movement on the American past and present.

Clark Hall

Mon., Wed. and Fri., 6:00-7:50 P.M.

HIST.—S.282b HISTORY OF THE SOVIET SYSTEM

Merritt Abrash, *Instructor in History*
The history of the Soviet Union from its founding until the present. After a brief survey of Marxist ideology and pre-1917 Russian history, the course will concentrate on the political, economic (non-technical) and social evolution of Russia under the Communist regime. Soviet culture and foreign policy will receive due attention.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M.

GOV.—S.25a COMPARATIVE GOVERNMENT

Morris H. Cohen, *Associate Professor of Government*
A study of the governments and politics of Great Britain and the major European powers.

Clark Hall

Mon. through Fri., 8:00–9:10 A.M.

GOV.—S.255 THE CONSTITUTION AND CIVIL LIBERTIES

Morris H. Cohen, *Associate Professor of Government*
An analysis of recent problems in the field of civil liberties including among others: freedom of speech, press and religion, civil rights and the administration of justice, congressional investigations, and the guarantee of equal protection of the law—desegregation problems. The course is conducted primarily via analysis of Supreme Court decisions and will emphasize the case study method rather than lectures.

Clark Hall

Mon. through Fri., 10:30–11:40 A.M.

GOV.—S.300 READING AND RESEARCH IN HISTORY AND GOVERNMENT**HIST.—S.300**

Reading or thesis courses for graduate students to be arranged with staff members.

LANGUAGES

French

Interession

F.—FR.—S.10 ELEMENTARY FRENCH REFRESHER

Theodore Nicol, *Associate Professor of Romance Languages*

An intensive course in which the student will spend three weeks studying, practicing, speaking and reading French. The class will meet for three 50 minute periods each day, attendance being required at all classes, with laboratory work in pronunciation. Classes will meet at 8:00 to 8:50 (Reading), 10:50 to 11:40 (Grammar), 2:00 to 2:50 (Pronunciation and Conversation). This course is recommended as a refresher for out-of-practice French students before taking Intermediate French or more advanced courses. It can be taken as a substitute for the second half of French 11 at Clark, thus validating credit for the first half. Auditors are welcome on condition that they participate fully in the course. Limited to 14 students.

Laboratory fee: \$10:00

Mon. through Fri., 8:00 and 10:50 A.M.; 2:00 P.M.

Summer Session

***F.—FR.—S.12 INTERMEDIATE FRENCH**

To be announced.

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily for affording insights into the culture of France. Open to students who have had the elements of French in a first-year college course or the equivalent. Indivisible course. The course will require the full time and attention of the student. Extensive use will be made of the Language Laboratory.

Laboratory fee: \$20.00 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double course, two classes daily, through Summer Session.

***FR.—S.14 READINGS IN FRENCH LITERATURE**

To be announced.

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent. The course will require the full time and attention of the student.

Library.

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

German***F.—GER.—S.11 INTRODUCTORY GERMAN**Karl J. R. Arndt, *Professor of German*

A complete beginning course in concentrated form, stressing reading and subordinating aural/oral practice to the main goal of the course, the reading of German journals and newspapers. No other academic work may be taken concurrently and it is expected that students will devote full time and complete attention to the study of German during the summer session.

Clark Hall

Mon. through Fri., 8:00–9:10 A.M. and 11:30 A.M.–12:40.

***F.—GER.—S.12 INTERMEDIATE GERMAN**James S. Edwards, *Associate Professor of German*

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Spanish***F.—SP.—S.11 INTRODUCTORY SPANISH**Raymond E. Barbera, *Assistant Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing. The course will require the full time and attention of the student. Extensive use will be made of the Language Laboratory.

Laboratory fee: \$20.00 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double course, two classes daily, through Summer Session.

Mathematics*Summer Session****MATH.—S.201 FUNDAMENTAL CONCEPTS OF MATHEMATICS**Richard J. Kohlmeyer, *Associate Professor of Mathematics, Albright College*

The course is designed for the teacher of mathematics in the secondary schools whose scholastic record in college is good but whose mathematical background is weak. This course will emphasize postulational thinking and the general and abstract nature of mathematics and will be concerned with the following topics: deductive logic, the number system, the algebra of sets, the basic concepts of analytic geometry, the idea of function, cardinal number.

There will be one section of Course S.201 with twelve participants. Not more than five persons other than members of the Institute may enter the course and permission of the Director of the Institute must be secured. Double course, 6 hours of credit, undergraduate or credit toward M.A. in Ed.

Lecture: Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

Clark Hall

Drill and discussion groups: Tues. and Thurs. afternoons.

*Double course, two classes daily through Summer Session

*MATH.—S.212 INTRODUCTION TO CALCULUS

Stewart M. Robinson, *Assistant Professor of Mathematics,
University of Rhode Island*

Will include topics in analytic geometry, and careful study of the idea of function, limits, differentiation of algebraic functions and of certain transcendental functions, and the definite integral. 6 hours of credit, undergraduate or credit toward M.A. in Ed. Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured.

Lecture: Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

Clark Hall

Drill and discussion groups: Tues. and Thurs. afternoons.

*MATH.—S.214 ADVANCED CALCULUS, INTRODUCTION TO ANALYSIS

Yue-Kei Wong, *Associate Professor of Mathematics,
University of Toledo*

This course is designed as an introductory course to Modern Analysis. From the properties of the real number system, a careful development of the concepts of limits, continuity, differentiability, and integrability will be undertaken, and the problems of elementary calculus reviewed from a more rigorous viewpoint. Extensions of these ideas will be made to functions of n variables including a discussion of point set theory of Euclidean n -space. In this connection partial differentiation (implicit and explicit), vector analysis, multiple integration, line and surface integrals, and implicit function theorems will be covered. Infinite sequences and series and improper integrals will be studied.

Limited to five persons in addition to members of the Institute. Permission of the Director of the Institute must be secured. 6 hours of credit, graduate.

Lecture: Mon. through Fri., 9:15–10:15 A.M. and 10:45–11:45 A.M.

Clark Hall

Drill and discussion groups: Tues. and Thurs. afternoons.

Philosophy

Summer Session

PHIL.—S.121 CLASSICAL AMERICAN PHILOSOPHERS

Robert N. Beck, *Associate Professor of Philosophy*

Study and discussion of selections from the writings of the six classical American philosophers: C. S. Peirce, William James, Josiah Royce, John Dewey, Alfred North Whitehead, George Santayana. Various aspects of their thought will be examined and compared, and their relation to the Americanism of their times will be noted.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M.

ED.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

The course description is given under Education.

Clark Hall

Mon. through Fri., 8:00–9:10 A.M.

Psychology

Intersession

PSY.—S.172a THEORIES OF PERSONALITY

Robert W. Baker, *Associate Professor of Psychology*

A survey of the various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Double course, two classes daily through Summer Session.

*Summer Session***PSY.—S.103b THE ABNORMAL PERSONALITY**Roger Bibace, *Assistant Professor (Affiliate) of Psychology*

The course will be devoted to a study of the development of the abnormal personality and a survey of the major types of abnormal behavior.

Clark Hall

Mon., Wed. and Fri., 8:00–9:50 P.M.

PSY.—S.152b PSYCHOLOGY OF ADOLESCENCERobert Kastenbaum, *Lecturer in Psychology*

The development of personality during adolescence with special emphasis on personality changes of the adolescent in a modern urbanized culture.

Clark Hall

Mon. through Fri., 10:30–11:40 A.M.

PSY.—S.173 PERSONALITY AND CULTURERobert Kastenbaum, *Lecturer in Psychology*

An advanced course in which selected problems of individual development, social psychology, and personality theory are examined from a cross-cultural point of view. Particular attention is given to the methodological and conceptual difficulties encountered in attempting to integrate the work of anthropologists, sociologists, and psychologists.

Clark Hall

Mon. through Fri., 9:15–10:25 A.M.

PSY.—S.380 RESEARCH IN PSYCHOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff members will be required prior to admission.

Sociology*Summer Session***SOC.—S.11a PRINCIPLES OF SOCIOLOGY**Frederick W. Killian, *Associate Professor of Sociology*

This is an introductory course in general sociology. Its purpose is to present the general principles that explain human social organization. It is a study of the framework of order in society—customs, relationships, groups and institutions as set in the culture. It is study of social interaction, social control and of structure and function, status and role, self and others, goals and values.

Clark

Mon. through Fri., 10:30–11:40 A.M.

SOC.—S.16 SOCIAL PROBLEMS AND THEIR ANALYSISFrederick W. Killian, *Associate Professor of Sociology*

This is a study of current social problems in the U.S., dealing with types and stages of problems and the developing current methods for their analysis and types of suggested approaches and resolutions. It includes problems of class, race, religion, economics, and the general material covered in the context of major social institutions, groups and sub-groups.

Clark Hall

Mon. through Fri., 11:45 A.M.–12:55 P.M.

COURSE SCHEDULE

INTERSESSION, June 12—July 1

B.A. —S.152b	Advertising	Balko	All Interession classes meet twice daily Monday through Friday at 9:00 A.M. and 2:00 P.M. with the exception of French S.10 which meets at 8:00 and 10:50 A.M. and 2:00 P.M.
B.A. —S.184a	Management—Labor Relations	Melder	
Eng. —S.11a	English Composition and Literature	Anderson	
Eng. —S.128	The Irish Literary Renaissance	Sultan	
F. A. —S.122	An Introduction to Symphonic Music	Hastings	
Fr. —S.10	Elementary French Refresher	Nicol	
Geol. —S.12a	Physical Geology	Lingner	
Gov. —S.143	Principles of International Relations	Ab rash	
Hist. —S.236	The American Revolution, 1763-1789	Merriam	
Psy. —S.172a	Theories of Personality	Baker	

SUMMER SESSION, July 5—August 19

Bio. —S.11a	General Biology, The Plant Kingdom, Especially in Relation to Man	Nilsson	10:30 A.M. and Labs.
Bio. —S.17	General Ecology	Nilsson	11:45 A.M. and Labs.
Bio. —S.262	Instrumental Procedures in Biological Investigations	Rosenkrantz	8:00 A.M. and Labs.
Bio. —S.300	Research in Biology	Staff	
*B.A. —S.16	Business Statistics	Hargest	9:15 A.M.; 2:00 P.M.
B.A. —S.17	Public Speaking	Beard	8:00 P.M.
B.A. —S.252a	Marketing Research	Balko	6:00 P.M.
Chem. —S.300	Research	Staff	
Ec. —S.13	Money and Banking	Wightman	10:30 A.M.
Ec. —S.21a	Business Cycles	Wiles	8:00 P.M.
Ec. —S.28	Research in Econ. Problems	Staff	
Ed. —S.20b	Geography in Education	Warman	11:45 A.M.
Ed. —S.22	Teaching of Reading and Lit. in Upper Elem. and Lower Secondary Grades	Devine	6:00 P.M.
Ed. —S.290b	Philosophy of Education	Beck	8:00 A.M.
Eng. —S.11b	English Composition and Literature	Carter	9:15 A.M.
Eng. —S.12	Public Speaking	Beard	8:00 P.M.
Eng. —S.106	Contemporary American Fiction	Beard	6:00 P.M.
Eng. —S.125	The Short Story	Carter	10:30 A.M.
F.A. —S.195	Introduction to Contemporary Art	Murphey	6:00 P.M.
Geo. —S.191	Cartography (single or double course)	Burnham	1:30 P.M. and Workshop
Geo. —S.20b	Geography in Education	Warman	11:45 A.M.
Geo. —S.27a	Human Geography	Warman	9:15 A.M.
Geo. —S.291	Cartography (single or double course)	Burnham	1:30 P.M. and Workshop
Geo. —S.300	Research in Geography	Staff	

*Double course, two classes daily through Summer Session.

Gov. —S.25a	Comparative Government	Cohen	8:00 A.M.
Gov. —S.255	The Constitution and Civil Liberties	Cohen	10:30 A.M.
Hist. —S.233	The West in American History	Borger	6:00 P.M.
Hist. —S.282b	History of the Soviet System	Abrash	9:15 A.M.
—S.300	Reading and Research in History and Government	Staff	
*Fr. —S.12	Intermediate French	Staff	9:15 A.M.; 2:00 P.M.
*Fr. —S.14	Readings in French Literature	Staff	9:15 A.M.; 2:00 P.M.
*Ger. —S.11	Introductory German	Arndt	8:00 A.M.; 11:30 A.M.
*Ger. —S.12	Intermediate German	Edwards	9:15 A.M.; 2:00 P.M.
*Sp. —S.11	Introductory Spanish	Barbera	9:15 A.M.; 2:00 P.M.
*Math. —S.201	Fundamental Concepts of Mathematics	Kohlmeyer	9:15 A.M.; 10:45 A.M.
*Math. —S.212	Introduction to Calculus	Robinson	9:15 A.M.; 10:45 A.M.
*Math. —S.214	Advanced Calculus, Intro. to Analysis	Wong	9:15 A.M.; 10:45 A.M.
Phil. —S.121	Classical American Philosophers	Beck	9:15 A.M.
(Ed.) —S.290b	Philosophy of Education	Beck	8:00 A.M.
Psy. —S.103b	The Abnormal Personality	Bibace	8:00 P.M.
Psy. —S.152b	Psychology of Adolescence	Kastenbaum	10:30 A.M.
Psy. —S.173	Personality and Culture	Kastenbaum	9:15 A.M.
Psy. —S.380	Research in Psychology	Staff	
Soc. —S.11a	Principles of Sociology	Killian	10:30 A.M.
Soc. —S.16	Social Problems	Killian	11:45 A.M.

*Double course, two classes daily through Summer Session

Please send me a registration card for the 1961 Clark University Summer School so that I may preregister.

My academic status is:

College Graduate ☐ College Undergraduate ☐

Special Student ☐ Clark University Evening College ☐
(not a degree candidate)

I (have, have not) previously attended the Clark University Summer School.

NAME

ADDRESS

City Zone State

Return to

SUMMER SCHOOL OFFICE, CLARK UNIVERSITY,
950 MAIN STREET, WORCESTER, MASS.

Classes meet daily, Monday through Friday—9:00 to 10:10 A.M. and 2:00 to 3:10 P.M. (Except Fr. S.10) —3 credits

B.A. S.152b Advertising
 B.A. S.184a Management-Labor Relations
 Eng. S.11a English Comp. and Literature
 Eng. S.128 The Irish Literary Renaissance
 F.A. S.122 An Introduction to Symphonic Music

SUMMER SESSION: JULY 5 - AUGUST 19

Morning Classes meet daily Monday through Friday—3 credits

8:00 to 9:10	Bio. S.262	Instrumental Procedures in Bio. Investigations	Ed. Gov. S.290b S.25a	Philosophy of Education Comparative Government
9:15 to 10:25	Eng. S.11b	English Composition and Literature	Hist. S.282b	Hist. of the Soviet System
10:30 to 11:40	Geo. S.27a	Human Geography	Phil. S.121	Class. Am. Philosophers
			Psy. S.173	Personality and Culture
10:30 to 11:40	Bio. S.11a	General Biology	Gov. S.255	Const. & Civ. Liberties
	Ec. S.13	Money and Banking	Psy. S.152b	Psychology of Adolescence
	Eng. S.125	The Short Story	Soc. S.11a	Principles of Sociology
11:45 to 12:55	Bio. S.17	General Ecology	Geo. S.20b	Geography in Education
	Ed. S.20b	Geography in Education	Soc. S.16	Social Problems
1:30 P.M.	Geo. S.191	Cartography		
	Geo. S.291	Cartography		

Evening Classes meet Monday, Wednesday and Friday—3 credits

6:00 to 7:50	B.A. S.252a	Marketing Research	Eng. S.106	Contemp. Amer. Fiction
	Ed. S.22	Teaching of Reading and Literature	F.A. S.195	Intro. to Contemp. Art
			Hist. S.233	The West in Am. History
8:00 to 9:50	B.A. S.17	Public Speaking	Eng. S.12	Public Speaking
	Ec. S.21a	Business Cycles	Psy. S.103b	The Abnormal Personality

Fr. S.10 Elementary French Refresher
 Geol. S.12a Physical Geology
 Gov. S.143 Principles of International Relations
 Hist. S.236 The American Revolution, 1763-1789
 Psy. S.172a Theories of Personality

TWICE DAILY COURSES

Two Class Meetings Monday through Friday

B.A. S.16	Business Statistics	9:15 & 2:00
Math. S.201	Fundamental Concepts	9:15 & 10:45
Math. S.212	Intro. to Calculus	9:15 & 10:45
Math. S.214	Adv. Calculus, Intro. to Analysis	9:15 & 10:45
Fr. S.12	Inter. French	9:15 & 2:00
Fr. S.14	Readings in Fr. Lit.	9:15 & 2:00
Ger. S.11	Intro. German	8:00 & 11:30
Ger. S.12	Inter. German	9:15 & 2:00
Sp. S.11	Intro. Spanish	9:15 & 2:00



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